PHILADELPHIA, APRIL 16, 1887.

ORIGINAL LECTURES.

CLINICAL LECTURE

ON A CASE OF COMMINUTED FRACTURE OF THE ASTRAGALUS, WITH EXCISION OF FRAGMENTS; ON RESECTION OF ELBOW-JOINT; AND ON THE VALUE OF ANTISEPTIC DRESSINGS.

Delivered at the Pennsylvania Hospital, Philadelphia, March 30, 1887,

BY THOMAS G. MORTON, M.D.,

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GENTLEMEN,—The case to which I now ask your attention is one of unusual interest and importance,—interesting on account of the character of the injury, important as a demonstration of the advance in clinical surgery as a direct result of the recent application of the principles of the Listerian system to the treatment of wounds. By its aid operations may now be successfully performed which by former methods were entirely inadmissible. Of the truth of this statement this case is an illustration.

Charles B., 54 years of age, a house-painter by occupation, fell from a scaffolding on the 23d of this month, and was brought here immediately after the accident occurred. He does not know what part of his body struck the ground. Upon admission he had a weak pulse, and his temperature was only 96½°. He complained of great pain in the back and legs; he could not walk, but he had power of motion and sensation in both lower extremities. He had a number of contusions, and his right ankle was swollen.

The treatment during the first twenty-four hours consisted in applications of dry heat and the administration of stimulants and morphine to relieve pain and restlessness. On the following day a more careful examination revealed what was apparently a dislocation of one of the tarsal bones of the right foot forward, so that it was quite movable under the skin of the instep. It was subsequently found that this was the anterior portion or head of the astragalus, which had been broken off by a vertical line of fracture from the remaining portion of the bone, and separated from its ligamentous attachments. The ankle-joint was so disorganized that the toes were extremely everted. Crepitus could be obtained, apparently due to fracture of one or both malleoli. The left ankle was also swollen and painful on motion, but there were no signs of fracture. His general condition having improved, I made an incision on the outside of the foot, following closely the line of incision for the excision of the cuboid bone, as in the case I showed you some weeks ago. Upon opening the joint I removed the entire astragalus in a number of separate fragments. The wound was thoroughly cleaned, a drainage-tube passed through the joint and out of an opening made over the instep on the inner side, the edges of the wound were drawn together with the interrupted suture, and an antiseptic dressing of Lister gauze and iodoform applied. Both feet were placed in fracture-boxes and suspended from a frame above the bed.

On the 29th the wound was dressed (five days after the operation). There had been no suppuration whatever. There was no redness and no swelling around the wound. His pulse, respiration, and temperature record was as follows:

March 24,	A.M...	.....	...	.....	P.M...	118	20	100°
March 25,	A.M...	120	18	98½°	P.M...	120	22	99°
March 26,	A.M...	104	20	98½°	P.M...	112	18	98.8°
March 27,	A.M...	120	22	98½°	P.M...	112	20	99°
March 28,	A.M...	118	20	97½°	P.M...	116	24	98.8°
March 29,	A.M...	112	18	98½°	P.M...	104	22	98°
March 30,	A.M...	112	22	97°				

His temperature was 100° on the afternoon of the operation, partly due, perhaps, to the administration of the anæsthetic; since then it has been normal. He has had good union except at the point where the drainage-tube is, and this we will remove to-day. The rubber tube was inserted because I thought that we might have considerable serous oozing. It is impossible to tell beforehand whether there will be much or little. Had I known that there would be no more effusion than we have here, I would have employed the drainage of chromicized catgut, which would have been absorbed without interrupting the healing of the wound.

RESECTION OF ELBOW-JOINT.

This man, 28 years of age, suffered an injury of his right elbow, by having it caught between the bumpers when coupling cars,

a month ago. There was fracture of the internal condyle of the humerus and of the ulna, and great contusion of the parts. The wound was treated with irrigation. Following the injury the fracture became compound, after which we removed some fragments of bone. At that time his temperature reached 101°, but has since declined to normal. As he seems in good condition, with a normal temperature, I will now do a resection of the elbow-joint.

In making a resection of this joint we need particularly to bear in mind the course and location of the ulnar nerve and brachial artery. The incision is made on the posterior aspect of the joint, and I will now remove a portion of the humerus and the olecranon, and, if necessary, part of the head of the radius.

The limb is first shaved, washed with turpentine, and then with corrosive sublimate (one to two thousand). An Esmarch bandage is applied, and rubber tubing fastened around the middle of the arm, and towels wet with sublimate solution are placed on each side of the field of operation. I find necrosis of part of the ulna and humerus requiring removal with a chain-saw, and I will also shave off the head of the radius. This is really a case in which amputation would have been preferable to resection; but the patient objected to it so strongly that we will try to save the limb.

After removing the bone, the inside of the cavity is thoroughly scraped out with a curette. It is very important to get rid of all this granulating tissue, which acts as a source of irritation. The sinus is now converted into the condition of a simple incised wound. We now remove the rubber tourniquet and find that there is very little bleeding. A drainage-tube is inserted, and the wound closed with sutures and dressed antiseptically. The secretions of the wound, which are necessarily aseptic, will come through the gauze and be absorbed by the cotton.

REAMPUTATION FOR PAINFUL STUMP.

The next case is quite an interesting one. He has been the subject of several operations since his admission into the hospital, eighteen months ago. An amputation of the upper third of the leg for an injury was followed by painful stump. Resection of the external branch of the popliteal was performed, and he had relief from suffering for a time, but only for a time, for the neuralgic pains gradually returned and became as severe as before. We conclude in these cases that some filaments or small inosculating branches have escaped division and gradually restored the nerve-functions, or the ends of the nerve become reunited by fibrous tissue. At the Orthopædic Hospital of this city we have tried a number of expedients to prevent reunion of the ends of the nerve after section, bringing them in diverse directions in neighboring muscles or doubling them backward upon themselves and fastening the ends alongside of the nerve-trunks. But quite often, in spite of all our efforts, they reunite and restore the channel of nerve-conduction. In this patient I also subsequently resected the internal popliteal, but with a like result. You can see the scars of each incision. As he now suffers again from neuralgia of the stump, I will proceed to do a Teale amputation just above the knee.

It is probably sometimes the case that neuralgia affecting a stump after amputation may have a central origin, but in others some local cause like a bulbous enlargement of the ends of the nerves may be the explanation of the symptoms. In either case an operation would be justifiable. The dressings are applied after the operation in the same manner as the preceding cases, substituting chromicized catgut drain for the rubber tube.

RESULTS FROM ANTISEPTIC DRESSINGS DURING FIVE MONTHS' SERVICE IN THE MEN'S SURGICAL WARDS.

The following is the statistical report of my recent term of service—from September 1, 1886, to January 29, 1887, inclusive.

Two hundred and nineteen surgical cases were admitted into my ward. Of this number, two hundred and eleven were cured, one was improved, four remained convalescent, and three died. Of the three fatal cases, one was due to pleuropneumonia following a lung-wound caused by fractured ribs; one was from a rupture of the intestine following an injury (the patient was in a dying condition when admitted); and one was from hemorrhage into the pleural cavity following a gunshot-wound of abdomen and chest.

Of the two hundred and eleven cases which recovered, fifty were simple and

eighteen were compound fractures;* six were crushes involving the feet; five were crushes involving the hand; four were compound fractures of the skull; two involved the inferior maxilla; one involved the wrist-joint; and one presented a compound dislocation of the knee.

There were twenty-nine lacerated, incised, punctured, and gunshot wounds. One stab involved the brachial artery, with complete division of the biceps muscle; one opened the ankle-joint; one opened the thorax; and one opened the abdominal cavity.

There were sixty-seven serious surgical operations performed, with but a single death, and this followed a gunshot-wound of the abdomen, to which I shall again refer.

There were also an enormous number of minor operations done in the casualty ward. These cases were promptly sent to their homes, and, for obvious reasons, have not been included in these tables. As far as I know, no harm befell any of them.

No outbreak of cellulitis, phlebitis, abscess, erysipelas, tetanus, septicæmia, or pyæmia followed any operation, and there was no secondary hemorrhage. There was one case of consecutive hemorrhage some few hours after an operation for perineal section.

In one case of very extensive scalp-wounds, facial erysipelas developed eight hours after the patient, who was a drunkard, was admitted; but the wounds united by primary intention.

I may here state that cases of erysipelas were constantly treated in the medical wards (which are directly between the two surgical wards) during the entire service, without giving us any concern.

Among the operations which antisepsis made it justifiable for me to perform, I may refer to—

1. The suturing of the broken fragments of a patella for the first time with catgut in this hospital,—indeed, for the first time, I believe, in this country.

2. In a case of double and excessive talipes equino-varus, excision of the cuboid bone in each foot for the first time in my experience, and for the first time in the hospital.

3. The first radical operation in the hospital for the removal of the glands involved in bubo was recently performed, and on several occasions successfully repeated.

4. My first abdominal section for gunshot-wound in this hospital I performed quite recently.

During my late term of service I resected the long bones of upper and lower extremities. Union of the radius and ulna occurred with a single dressing. The major amputations (except in one instance, where I used a rubber drainage-tube) were dressed only once, and that at the time of the operation. In each instance the original dressing was removed on the twenty-first day or later, in the presence of the class, and in every case the result showed a perfectly united, solid, sound stump. Catgut drain was in these cases always used, with the single exception referred to.

In two cases which required trephining for compound depressed fractures of the skull, no symptoms followed these operations. In one case the patient was up and about the ward on the fourth day; the other on the third day. In both cases the primary dressing was not removed until the end of the third week, and no further dressing was applied.

In a comminuted fracture of the patella, after fully opening the joint by a vertical incision, the fragments were drilled in three places and securely held in close apposition by catgut; in this case apparently good bone-union has taken place.

In another case the knee-joint was entirely exposed by a fall, which ruptured the old inflammatory adhesions that had been thrown out in nature's attempt to unite by new tissue a quadriceps ruptured more than a year ago. The condyles and head of the tibia were exposed, the lateral and crucial ligaments were torn, the wound of the soft parts of the joint was so extensive that the leg was held only by a band of tissue posteriorly; the vessels and nerves were preserved intact. Twenty interrupted catgut sutures and one dressing were all that was required, and a perfect recovery followed.

The main arteries of limbs and elsewhere were tied, and uniformly with but a single dressing and no pus.

Large scrofulous and simple abscesses were freely opened, and, after being curetted, healed at once as in ordinary incised wounds.

* The fact that simple fractures and subcutaneous tenotomy, as the rule, repair promptly and without causing any septic conditions should be noted.

The last time I operated upon a case of scrofulous abscess was seventeen days ago. It occupied the outer chest-wall on the left side, and, after it was opened by an incision twelve inches in length, three ribs were found to be involved in superficial necrosis. The contents of the abscess were about ten ounces, and the walls were covered by a pyogenic membrane, which was completely removed with the curette. The ribs were also curetted until they freely bled. The cavity, having been thoroughly cleansed, was, after placing at the lower angle a small rubber drain, brought together by a large number of catgut sutures. The chest-movements were partially controlled by the laced corset similar to that used for fractured ribs.

This case was dressed again on the seventh day, the drain was removed, and there was perfect union throughout. It has not required dressing since.

Let me formulate the following conclusions from this five months' trial of antiseptic methods:

By the use of antisepsis we have been enabled to secure absolute cleanliness in the dressing of wounds.

By this means we shorten the wound-healing period by securing primary union, and can thus protect the patient from the dangers incident to suppuration, and so get rid of cellulitis, phlebitis, abscess, septicæmia, pyæmia, and secondary hemorrhage.

We also materially lessen the chances of the occurrence of erysipelas and tetanus.

By the infrequency of renewal of surgical dressings, pain, so frequent in handling wounds, is materially lessened, if not entirely avoided.

We are also able to adopt a conservative course in many instances, and limbs and joints are saved which, under other treatment, would of necessity be sacrificed.

We have abolished those scourges which so long have infested surgical wards, the sources of "hospitalism," so that we at last have succeeded in accomplishing that which has always been the aim of surgery. The mortality-rate has been remarkably reduced by the introduction of the antiseptic method, and I feel warranted in declaring that where it is practised deaths in surgical wards should occur only in cases commonly recognized as "unavoidably fatal."

ORIGINAL ADDRESS.

MEDICAL TEACHING, PAST AND PRESENT.

Abstract of an Oration delivered before the Alumni Association of the Medico-Chirurgical College of Philadelphia, Thursday, April 7, 1887,

BY DUDLEY S. REYNOLDS, A.M., M.D.,

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WHEN anatomy was studied in a few of its meagre outlines merely, and for the most part in secret, there came forth a man named Monro, in the great city of Edinburgh, where Benjamin Rush, Ephraim McDowell, Walter Brashear, David Hosack, and Benjamin Dudley received their first medical training, and with the force of great eloquence and a thorough mastery of what appeared, at that time, all of the details of anatomy, succeeded in investing the dry bones of the skeleton with a fascination but little less forcible than that with which the immortal Shakespeare has clothed the cowardly assassin of Duncan, Scotland's famous king. Monro was so great in his style and manner of teaching that the medical school at Edinburgh became for the time the leading medical institution of the world. From that day to the present the study of anatomy has been rendered simple and easy.

An ambitious physician of that time, jealous of Monro's great success and reputation as a teacher, built a hall in Edinburgh and established therein a museum of anatomy. To his amphitheatre he invited the students and practitioners of medicine to hear him lecture and witness his demonstrations. He rattled the dry bones before his audience with such energy and spoke with such eloquence that he soon robbed the great university of all its students at the time of the usual lectures on anatomy. This man's boldness in exhibiting the skeleton, and even the cadaver itself, for purposes of demonstration aroused great excitement, but the earnestness with which he prosecuted his work finally won for him that success he so much deserved.

This may be said truly to have been the very beginning of illustrative methods in medical teaching. It was a long time, however, before other branches of the curriculum advanced beyond the prevailing theories of a few leading men.

On the 9th of July, 1790, Dr. Benjamin

Rush stood in the hall of the College of Physicians in this city and delivered a eulogium upon the life and character of William Cullen, the author of a new system of medicine. Said Dr. Rush, "This illustrious physician was the preceptor of many of us; he was, moreover, a distinguished citizen of the republic of medicine, and a benefactor of mankind; and although, like the sun, he shone in a distant hemisphere, yet many of the rays of his knowledge have fallen upon this quarter of the globe. Dr. Cullen possessed a great and original genius in discerning the relation of distant truths by the shortest train of intermediate propositions. His imagination surveyed all nature at a glance, and, like a camera obscura, seemed to produce in his mind a picture of the whole visible creation. His knowledge was minute in every branch of medicine; he was a great anatomist and an ingenious physiologist; he enlarged the boundaries and established the utility of chemistry; he stripped materia medica of most of the errors that had been accumulating in it for two thousand years, and reduced it to a simple and practical science."

At the time Cullen made his appearance as a teacher, the doctrines of Boerhaave were universally prevalent. Boerhaave believed that all diseases depended chiefly on the presence of certain acrid particles in the fluids of the body, and in a departure of these, in point of consistency, from the natural state.

Says Dr. Rush, "Cullen's first object was to expose the errors of this pathology, and to teach the public to seek the causes of disease in the solids."

Cullen's theories concerning the nervous system so impressed his eulogist that he boldly proclaimed, "No man would ever unravel the operations and the whole nature of the nervous system without being forced to acknowledge that the foundation of his successful inquiries was laid by the discoveries of Cullen."

The "pathies" and "isms" arose, and flourished for the edification of imaginative people. The few facts pertaining to every branch of medical education excepting anatomy and botany were so scattered as to defy every attempt at establishing principles, until finally Billings came, and the new pathology of Simon opened up new fields for speculation and experiment.

Dissection became a recognized part of the curriculum, and was openly announced as part of the requirements in all the best schools.

John Hunter's great thirst for experimental knowledge had wellnigh taken hold of the world when Jenner, in 1798, came as the apostle of a new creed, based upon the experiences of the humble dairymaids. Vaccination as a protective measure against the smallpox remains an unexplained fact.

Presently instruments of precision began to be employed; vivisections of inferior animals were made, and the science of biology began to receive fresh attention. The humoral pathology, homœopathy, Thompsonianism, and all the "isms" and "pathies" paled into so many dim shadows over the fields of former conquests.

The medical student now, instead of sitting patiently by the hour listening to the beautiful sophistry with which individual theories and hypotheses concerning the nature and character of disease were supported, has at length come to the point where demonstration of the theories and illustrations of the methods of practice are demanded.

The growth of medical education, it may be said, has been slow. Twenty-five years ago there were, indeed, but few schools in the country where clinical and laboratory instruction formed anything like a prominent feature of the curriculum. The result of these practical methods of inquiry, and of the substitution of the few demonstrated facts applicable to the study of disease, has been wonderful. A great and new science of pathology is now established upon the ruins of Cullen's popular theory.

The great Pancoast comes no more to stand before you, with burning lips and irresistible arguments, to convince you of the superiority of his method of treating wounds; in his stead, the gifted son invites you now to the dispensary and to the clinic-rooms, that you may see for yourselves the masterly touch of his cunning hand in the adjustment of fractured bones, or witness his skilful methods of stanching the flow of the crimson tide in wounded arteries. You are not asked to believe upon the mere statement of your professor of chemistry, whose beautiful experiment of the consuming powers of oxygen and the frigid powers of carbonic acid gas are, upon the one hand, the life-giving force in

the atmosphere we breathe, and, on the other, the death-dealing force in the dark recesses of subterranean caverns. He does not content himself with telling you that carbonic acid gas is evolved from the mixture of sulphuric acid and carbonate of lime, but proceeds at once to the demonstration, and with the magical process of his art he compels every member of his class to become practically familiar.

In the pathological laboratory, which is an institution of comparatively recent device and origin, you now study in the dead subject the nature and extent of those changes wrought by disease.

Experimental research has at length brought to light the startling fact that nearly all of our diseases, and especially the contagia, arise from specific micro-organisms, which, although their life-histories have been studied with great minuteness of detail, cannot with certainty be classified as animal or vegetable in their nature. A minute rod-shaped body, called by its discoverer, Dr. Robert Koch, the chief of the great "Gesundheitsamt" of the Prussian empire, the *bacillus tuberculosis*, is now universally recognized as the cause of all tuberculous processes in man and the inferior animals. It has likewise been discovered by experiment that this bacillus is wafted in the air, that it grows in lymph by preference, and when inoculated or injected beneath the skin it passes into the blood-current, and there seizes upon the germinal matter or sarcode of the white blood-cell, arresting the cell instantly in its course, causing it to assume enormous dimensions, interfering in that way by obstructing the blood-stream, and presently, when it ruptures, to discharge its myriads of spore-cells to attack in like manner contiguous leucocytes, until the current of blood in that tube is arrested. This of course speedily brings on those changes characterized by heat, pain, redness, and swelling.

Now, when the bacillus is breathed into the air-passages, if the whole of the respiratory membrane be sound upon its surface the bacillus will not grow, but will find a temporary lodgement in the mucus, and presently be snuffed up and hawked out, or coughed up and expectorated. If, however, these bacilli or their spore-cells lodge upon an abraded surface, where they gain ready access to the lymph-tubes, they colonize and grow there, and by slow invasion the whole lymphatic system may be destroyed. With these facts, we are at once prepared to appreciate both the means and the reason why tuberculous disease generally invades the respiratory organs first, and why tuberculosis as an inheritance generally proves fatal to the infant.

The specific cause of suppuration in wounds has recently been brought to light in the discovery of microbes, which collect in groups, and which, when assembled in large numbers, present a golden-yellow tint. This is called the "staphylococcus aureus," and to some recent experimental researches of Professor Cornil, of Paris, and Prudden, of New York, we are indebted for the demonstration that suppuration in wounds is invariably the result of the presence of this microbe.

Scarcely less brilliant have been the discoveries in chemistry and physiology. Merck, of Darmstadt, has at last succeeded in producing, by synthesis, many of our most valued therapeutical agents, and in 1879 he brought forth a new product by this agency, which is known and prized by every ophthalmic surgeon in the world.

In testing the refraction of the human eye it is necessary to suspend the focussing power in order to secure accurate results. For this purpose the sulphate of atropine, long in universal use, required in many cases from three to five days' constant use of the drug to bring on complete suspension of the accommodation, and then from twelve to fourteen days were required for the patient to recover fully from its effects. The hydrobromate of homatropine, made by the synthetical method of Merck, whilst at the same time free from toxical effects, is speedy and more uniformly efficient in suspending the accommodation than any drug hitherto employed for that purpose, complete suspension now being possible within the brief space of an hour and a half, and all signs of its effects disappearing uniformly within thirty hours. It is likewise powerful in the relief of pain, and may be instilled into the eyes of children with perfect impunity in solutions of the same strength as are used for adults.

Further, the manufacturing chemists now separate the active principle from the crude drug, and prepare our most potent medicines in granules, triturates, and compressed tablets, all divided for conveni-

ent use. With the exact knowledge now conveyed to the student of medicine in the clinic-rooms and laboratories of our colleges, the minutiæ of scientific processes must be mastered, and the graduate, armed with these powerful weapons of so many exact sciences, goes forth to practise in communities where general intelligence makes closer discrimination as to the qualifications of the medical practitioner than were made in former years. The aid of legislation has in recent years come forth as a thunderbolt from the people against empiricism and quackery.

In this great commonwealth your legislative authority has wisely ordered that no man shall practise without a diploma duly signed by one of the lawfully-constituted faculties of instruction in a regularly-established medical college in Pennsylvania. In the old State of Virginia, and in some other States, diplomas are no longer recognized as licenses to practise medicine, but are demanded as preliminary to the examination of the holder who is an applicant to practise in such States.

Now, with these powerful agencies of the law encouraging the efforts of able and earnest teachers in the regularly-established medical colleges of this country, there is no danger that too many people will qualify to practise the art of healing. There are, of course, many commercial schools throughout the country pretending to give instruction in medicine. These are found in almost every State, and the holders of their diplomas may be found in our cities, driving the street-cars, washing bottles in suburban drug-stores, and in many cases pointing horse-shoe nails or gently guiding the brush of paint over cold brick walls of our houses. With the rapidly-growing population of this country we have no excess of medical colleges, and there is, as Webster said to the student of law, always plenty of room in the higher walks of the profession. In the lower grades you shall gradually witness the decay that ignorance always suffers in the presence of scientific research.

Do not understand me to say that the practice of medicine itself shall ever reach the dignified plane of an exact science. The uncertain tenure of life, and the varying degrees with which the vital forces operate in the economy, taken together with the varying conditions in which they operate, make it impossible; yet, by the aid of experimental study, the present generation has witnessed the discovery of the cause of nearly all the infectious contagia; and in their treatment the ounce of prevention may now wisely be ordered. For most of them the pound of cure has not yet been isolated. May we not hope that some one of these young gentlemen just admitted to the ranks of the profession this evening shall achieve this great goal for which we are all striving? May we not hope that, great as have been the giants in the medical profession in this metropolis, greater genius is now being bent into the same channels, and that the march towards perfection shall not be abandoned by a single one among them until the devotees of medicine shall be able to establish a universal science?

ORIGINAL COMMUNICATIONS.

ARTERITIS COMPLICATING TYPHOID FEVER.

BY L. HARRISON METTLER, A.M., M.D.

IN a previous paper* I endeavored to show that an endarteritis of more or less severity is primarily the cause of the gangrene which occasionally determines the unfavorable result of an attack of typhoid fever. The possibility of the occurrence of this grave accident renders not unworthy a brief consideration of its diagnosis and treatment. The literature upon arteritis is far from being commensurate with the importance of the subject, a fact which is probably due to the great obscurity which overhangs the pathology of this disease. Of arteritis complicating typhoid fever the study has been still more unsatisfactory, and the anxious practitioner may look in vain through many of our standard authorities for suggestions as to the symptoms and therapy of an accident which may prove one of the most disastrous that he will encounter during the whole course of the fever. He will realize the feelings of the countryman of whom the poet says,—

> "Rusticus expectat dum defluat amnis; at ille
> Labitur et labetur."

Arteritis, general or localized, is believed by many to be not an infrequent

* Vide Philadelphia Medical Times, No. 502, vol. xvii.

companion of typhoid. It becomes therefore a matter of the highest moment to recognize it, if possible, *early* in the course of the fever, lest it may be the cause of a thrombus within the vessel itself, and thus of a secondary gangrene.

However it may be produced, arteritis with typhoid fever presents no symptoms *per se* different from those of any other kind of arteritis. The morbid anatomy, as proved by actual demonstration, is always the same in all forms. We find always the same roughening of the intima, the same engorgement of the walls, the same diminished elasticity, the same embryonic infiltration of the three tunics. There is a close intimacy between the blood and the blood-vessels, so that any deviation from the normal in the condition of the former will more or less affect the condition of the latter. The poisonous condition of the blood is the cause of the intima and media being the frequent origin of the inflammatory process, but it sometimes happens that a periarteritis occurs in typhoid fever with but a slight implication of the inner coats. Owing to the ramification of the vasa vasorum in the outer coats (appearing only in the inner coat when they are inflamed as in conjunctivitis), an inflammation of the external tunics will be sthenic and conservative in character, while in the internal tunic it will have more of a tendency to disorganize and to destroy.

Arteritis, when it occurs, manifests its first symptoms at about the latter part of the third week of the fever,—about the beginning of convalescence. Just when the patient's hopes of a speedy return to health are beginning to brighten, and everything is apparently progressing in a most happy manner, a quick, sharp, stinging pain is suddenly felt along the course of the affected vessel. In some instances, in which the inflammation is not so violent and so acute, this pain begins even earlier, and is then of a dull, aching character, gradually becoming more intolerable with the daily advance of the affection. In a case in which it occurred suddenly the patient likened it to the "stretching or tearing of the nerves of the limb." Appearing thus, as it were, spontaneously, it is increased by every movement on the part of the patient,—by walking, by simply maintaining the upright position, and especially by external pressure of any sort. By means of the last fact the site of the inflammatory process, when it is localized, can be readily determined by pressing with the fingers of the two hands over the artery, as in the case of the femoral or brachial, and along the sides, as in the case of the posterior tibial. As soon as the point of special inflammation is touched, the patient will scream with the intense agony. According to Legroux, the pain becomes intense only when the perivascular tissue is also inflamed. The severity of the pain is doubtless increased where there is also periarteritis, for it is in the adventitia that the blood-vessels and nerves terminate, whereas in the case of an endarteritis this pain is produced chiefly by the swelling and pressure of the tunics involved.

Along with this pain, which is in reality the only positive symptom of this obscure affection, there is violent throbbing, often felt in parts of the body situated at a considerable distance from the inflamed artery. This is due to the impaired elasticity of the arterial walls. Finally, there is a general weakening of the pulse-beat, which at length becomes hard and wiry in character, all due to the pathological condition of the walls of the vessel. Fever and general distress accompany these symptoms, as in other forms of inflammation. Up to this point the vessel may have still remained permeable, though its calibre may have been much diminished by the swelling of the coats. For, as Berard long ago showed, arteritis is not incompatible with the permeability of the vessel inflamed.

There are a few other symptoms, of variable degrees of certainty, however, which may sometimes be detected even before the more disastrous result of complete obliteration has taken place. Owing to the diminished blood-supply, there will be a slight lowering of the temperature in the parts, ofttimes as much as several tenths of a degree being detected by a delicate surface-thermometer. The skin assumes not unfrequently a bluish or violaceous hue, while its sensitiveness is considerably heightened. Sometimes it feels as though ants were crawling over it ("fourmillements"). Swelling, due to a slight œdematous condition of the limb, may appear. All of these latter signs are of far less significance than the pain, which of itself is almost pathognomonic of arteritis, and is readily differentiated from a neuralgia of

the neighboring nerve with which it is at all likely to be confounded, by the suddenness of its onset and its persistency after it has once announced itself. Furthermore, in neuralgia there would not be the diminished pulse and temperature, as well as the constitutional disorder, which accompany arteritis. Phlebitis and lymphangitis are easily differentiated by their production of a superficial redness in the part.

If now a clot has formed and the vessel has become permanently occluded, many of these symptoms—such as, for instance, the darkening of the skin, the œdematous swelling, the tingling of the nerves—will become still more pronounced, finally ending in a profound discoloration, numbness, complete loss of sensation, coldness, and not infrequently paralysis. But in addition to these we have two very distinct symptoms which foretell unmistakably the near approach of gangrene, even before the more superficial signs of the gangrene itself have become at all visible. The first is the complete cessation of all pulse-beat in the artery below the seat of the obstruction. The second is the sensation to the finger of a hard, irresistible, non-elastic cord produced by the occluded artery. Immediately after the appearance of these two signs, all the usual signs of gangrene begin to make themselves manifest. Blebs begin to arise on the surface, and either dry up or assume the form of pustules. Dark patches make their appearance, and, enlarging and uniting, gradually envelop the entire extremity below the point of obstruction. The part begins to dry up and mummify, or to assume the appearance of moist gangrene if the vein as well as the artery be involved. The swelling increases. Upon puncturing the skin, a peculiar yellowish or reddish fluid, of a disgusting odor, makes its appearance, exuding through the wound. So the mortification proceeds, until at length the line of demarcation becomes established, and the sphacelus is ready to be removed through the agency of nature or by the art of the surgeon.

In the treatment of arteritis complicating typhoid fever there are three special indications to be observed. The first is to remove, if possible, the exciting cause; the second, to allay the inflammation; the third, to prevent the formation of blood-clots.

With regard to the cause of typhoid arteritis, I have already stated that I believe it is to be found in the septic condition of the blood. According to Klebs, Eberth, Letzerich, Wernich, and others, there is a specific germ, the *bacillus typhosus*, which somehow produces such an alteration in that fluid as to render it more coagulable and irritant to the vascular walls. To this same condition of the blood, Estlander, Fernet (who reports a remarkable case occurring in a woman), Raynaud, Sigerson, and Duchenne attribute the faulty innervation of the arterial coats, frequently producing a vaso-motor spasm of more or less duration in the arteries, and consequently a gangrenous tendency in the distal parts of the extremities. Now, if it be true that these bacilli which enter the system through the respiratory and alimentary tracts are the cause of the poisonous condition of the blood, it is reasonable to suppose that to destroy them before they have migrated to any extent from these tracts into the general circulation is the most positive way of guarding against the arteritis directly dependent upon this deteriorated condition of the blood. To destroy these germs and to antagonize their injurious effects upon the circulation have of late stimulated to the highest exertion the energies of our ablest therapeutists. Antiseptics of all sorts have been brought into the field of experimental investigation, but so far the success has been unsatisfactory. There is the treatment by carbolic acid and iodine (the so-called German specific, and of which we have the most favorable reports), by chlorine, quinine, mercury, salicylic acid, resorcin, etc., none of which save the first offers anything like a satisfactory result. Indeed, judging from the results of antiseptic treatment, we are sometimes almost tempted to believe that perhaps, after all, the bacilli have nothing whatever to do with typhoid fever. Yet, what the pathologist tells us as to the results of his investigations, this is the proper line of investigation for the discovery of the radical cure of the disease. Perhaps the fault lies largely in the insufficiency of our experience and number of instances in which the antiseptic treatment alone was used to the total exclusion of other remedies, which may have had the effect of modifying the results. As soon as we shall have learned of an effectual antiseptic treatment for typhoid fever,

we shall have learned *par avance* the best prophylactic treatment for the complicating arteritis and its disastrous results.

Again, granting that the cause of the arteritis is the deterioration of the blood by an organized germ, would the use of antiseptics be of any avail in checking it when already in progress? Certainly not, so far as they are employed simply as antiseptics. As antipyretics some of them may be employed with the greatest advantage—as, for instance, mercury in the form of calomel, quinine, salicylic acid, and resorcin—as soon as the secondary fever resulting from the arterial inflammation shall have occurred, which is usually at about the beginning of convalescence. About this time, however, the general improvement in the condition of the patient indicates that the bacilli and their immediate influence upon the blood have been overcome. The damage to the arterial walls has already been done, and our attention must now be directed to follow out the last two indications of the treatment.

Any remedies employed during the course of typhoid fever to lower the temperature, to control the secretions, and otherwise to modify the fever itself will have the same salutary effect upon the course of a latent arteritis that may be present. In all probability, this is the reason why an obliterating arteritis in the larger vessels is comparatively so rare a complication, while in the more minute arteries it is so much more frequent, as is seen in its frequent after-effects, such as the hemorrhagic infarcts of the various viscera and the almost constant muscular degenerations. With the aid of the antiphlogistic treatment employed in the typhoid fever, the larger vessels are enabled by their greater strength and vitality to resist the tendencies to become inflamed.

When an arteritis of any of the larger vessels may have been happily detected early, most prompt and decisive treatment will be necessary to the hope of preventing the formation of a thrombus and mortification of the part. Though an attack of local arteritis may end occasionally in resolution, the fibrinous deposit being absorbed by the aid of appropriate remedies, by far the majority of the attacks end in complete obliteration of the lumen of the vessel. Nevertheless, we should never despair, but at once employ measures to bring about a resolution if possible. A free action of the emunctories should be promoted by the use of purgatives, diuretics, and diaphoretics. For this purpose we may use the oleaginous purgatives, castor oil, calomel, antimonials combined with refrigerant salts (nitrate and acetate of potash), acid drinks, etc. The vascular excitement should be lowered by the use of aconite root, veratrum viride, or hyoscyamus in camphor mixture. If the patient can bear it, colchicum, antimony, and mercury with calomel may be employed to assist the absorption of the fibrinous concretions. Pain should be relieved by opium internally or externally, preferably by morphia hypodermatically.

In diseases of the vascular system we must not rely wholly upon medicines. The diet should be light yet nutritious, consisting chiefly of the farinaceous foods. Chomel and others regard the adynamic form of typhoid fever as the most favorable to the development of the gangrenous complications. Hence the vital powers should be maintained by the judicious use of tonics. Stimulants should not be used unless they are urgently demanded by the rapid sinking of the patient.

The local treatment of arteritis, when the site of the inflammation has been positively established, is quite as important as the systemic. The limb should be elevated, leeches applied, hot stupes placed over the course of the artery, or, if more agreeable to the sufferer, cold-water dressings, poultices of chamomile-flowers, or decoctions of poppy-heads, to quiet the inflammatory action and to relieve the pain. The patient's mind and body should be kept as tranquil as possible. In this way there is a bare chance of averting the threatened gangrene. But so obscure are the signs of arteritis itself that by the time its diagnosis is fully established obliteration has already taken place and the gangrenous spots have already begun to appear.

Now the most important duty of the physician is to support the patient and to stimulate the circulation by means of alcohol and digitalis. The peripheral circulation should be awakened, if possible, by the alternate application of heat and cold. As suggested by Dr. Keen, the constant-current battery may be sometimes advantageously used for the same purpose. If the gangrene still continues to advance and all our efforts to restore

the circulation have been futile, all we can then do is to make numerous incisions into the mortified tissue, cover it with laudanum dressings, dust over it absorbing powders, aromatics, and antiseptics, and watch for the appearance of the line of demarcation. The amputation, which is the *dernier ressort*, is rather a surgical than a medical question.

1938 North Broad Street, Philadelphia.

A CASE OF TIC DOULOUREUX OF TWELVE YEARS' STANDING TREATED BY LARGE DOSES OF THE SALICYLATES WITH MARKED SUCCESS.

Read before the Philadelphia Neurological Society, February 28, 1887,

BY FRANCIS X. DERCUM, M.D.,

Instructor in Nervous Diseases, University of Pennsylvania.

ON November 30, 1886, the writer was summoned to attend Mrs. K., aged 52 years. She was a German by birth, of good physique, and had been the mother of a number of healthy children. She told me at once that she was a sufferer from tic douloureux. It needed no exhaustive investigation to prove that her statement was unfortunately true. As she spoke she was constantly interrupted by frightful paroxysms of pain. She moved her jaws as little as possible, and her words were uttered so cautiously as at times to be indistinct. She gave me her history with great difficulty and at the expense of much suffering. Twelve years ago, while apparently in good health, she was suddenly attacked by pains in the right side of the face. These gradually increased in intensity. Previous to the onset she had had no illness whatever, and she had not as yet entered upon the menopause. All of her functions, as far as I could ascertain, had been normal. She herself attributed her affection to an attack of cold.

Her suffering had been practically continuous. The paroxysms had varied at times both in frequency and severity. Sometimes they occurred many times a minute, and again but four or five times an hour. When their intensity was at its greatest height, she felt frightful darting pains, which culminated—to use her own expression—as though her face were being rent to pieces, or as though it were bursting from an explosion. When the pains were comparatively mild, they were simply shooting or darting in character. She was always worse in cold, damp, or stormy weather, and suffered much less when the weather was mild and clear.

A close examination revealed the fact that the nerve-distribution most affected was that of the superior maxillary. The inferior maxillary was also decidedly affected, but the ophthalmic division did not seem to be affected at all. The cheek, especially about the infra-orbital and malar regions, was excessively hyperæsthetic. A slight touch was sufficient to provoke a spasm of pain. The same was true, though to a less extent, of the gums, —*i.e.*, on the affected side,—from which the bulk of the teeth, the molars and premolars, had been fruitlessly removed.

Further questioning elicited the statement—and it was an all-important point in her history—that during the entire period of twelve years she had had but one remission, — *i.e.*, one *complete* remission, —and this had occurred under the following circumstances. Some two years ago her physician had ordered her to Atlantic City. Here she contracted severe rheumatism, which affected mainly the lower extremities. The attack lasted upwards of eight weeks, and during all of this time she was free from her tic douloureux. Just as soon, however, as the rheumatism subsided her tic reappeared, and had continued with varying degrees of intensity up to the present time.

Notwithstanding this history of a prolonged remission, I hesitated about giving the patient any encouragement. She had been under the hands of various physicians, who had made unusual efforts in her behalf, and who had finally pronounced her case incurable. I, too, told her that we could expect but little from drugs, and that the only remedy that suggested itself to me was a surgical procedure, the propriety and results of which were themselves open to question. I referred to nerve-stretching, which I briefly explained to her. She expressed herself as willing and even anxious to have trial made, saying that "if it didn't kill her it couldn't make her any worse." I left her without writing a prescription, promising to call again in a few days.

Two views, of course, presented themselves regarding this case: one that it was

of organic origin, the other that it was symptomatic of some general disease or condition. In favor of the first view was the long-continued existence of the affection. The latter had existed for twelve years, but it appeared to me that the history of a marked and prolonged remission of eight weeks rendered an organic origin extremely improbable. Certainly we should not expect a diseased bone or membrane to accord with such a history. On the other hand, it was difficult to accept the second view. The patient presented no evidence of a constitutional trouble. Her general health, as it so often is in these cases, was good. There was no evidence of specific disease, and no affection of the kidneys. The patient's history suggested a doubtful connection of rheumatism with the trouble, but it seemed strange that, if rheumatic, the latter should have persisted for so many years.

I finally decided, before attempting the operation of nerve-stretching, to test the question of rheumatism very thoroughly; and, accordingly, at my next visit I prescribed oil of gaultheria in fifteen-minim doses, to be taken every three hours. After four days had elapsed I called again, and, to my surprise and pleasure, found that my patient was decidedly better. The paroxysms were far less frequent and much less painful. The hyperæsthesia of the cheek and gums had also altogether disappeared. The physiological action of the salicylate was evidenced by decided tinnitus. I directed the remedy to be continued, and called at intervals of three or four days until December 20, when I found my patient suffering from a diarrhœa, the result of an indiscretion in diet. Up to this time she had steadily improved, and she was to all intents and purposes well. Previously she had never been able to eat without exciting pain. The pleasure of eating with comfort had resulted in eating too much, and hence the diarrhœa.

I now stopped the oil of gaultheria, and for a number of days directed my attention to her digestion. The diarrhœa was promptly relieved, and on December 24 she ventured out of the house. It was early in the morning, there was snow upon the ground, and it was very cold. This exposure was followed by a mild recurrence of the tic. She had a few paroxysms of moderate severity. She of her own accord resumed the oil of gaultheria.

On December 26 I saw her again, and now replaced the oil of gaultheria by salicylate of sodium, of which I gave twenty grains every four hours. This she tolerated well. Every trace of tic douloureux now disappeared. She voluntarily increased the dose of the salicylate to thirty grains, thus taking one hundred and twenty grains a day. Her fear of a return of her terrible affliction caused her to persist in this excessive dose until December 29, when, upon my urgent advice, she diminished the dose to twenty grains three times a day. The large doses had caused marked depression, her tinnitus was excessive, she was decidedly deaf, and I fancied that her pulse was weak. Besides, she was taking very little food, and her digestion was much impaired. Although she had not the slightest return of pain at any time, she persisted in the use of the salicylate until January 12, when it was finally abandoned.

Since that time she has been exposed to bad weather on numerous occasions and at various hours of the day and evening. Upon one occasion, indeed, she caught a severe cold, which gave rise to a severe bronchitis, but without any return of the tic douloureux. At present writing she is entirely well. How long she will continue so is, I confess, a matter of doubt. However, I believe that the present cessation of the pain is directly due to the action of the salicylates, and to nothing else. The effect was too sudden and striking to be attributed to other causes. When the oil of gaultheria was stopped on account of the intercurrent diarrhœa, the pain reappeared, but immediately ceased when the salicylate was resumed. I believe also that the good effects of the drug were due to the large doses employed.

The mode of action of the salicylates in this case is a matter of interesting speculation. It is possible, of course, that the affection was rheumatic in its origin, and that the salicylates were efficient on this account. On the other hand, it is not impossible that the remedy acted in another and entirely different way, and the following hypothesis seems to me plausible. That salicylic acid acts directly on the nervous system cannot, I think, be doubted. To me the single fact of the ringing in the ears is an evidence of such action, and the further fact that increased doses result in deafness a confirmation of this idea.

Now, if salicylic acid produces ringing in the ears and even deafness, it is probably by a direct action of the drug on what we may call the acoustic protoplasm. That is, the acoustic protoplasm is *molecularly impressed;* it has the rates and directions of its molecules so affected as to give rise first to abnormal sensations, and finally it has the molecules so much arrested or inhibited as to give rise to an entire loss of function. May it not be that the action of the salicylate in this case is due to its modifying impress on the abnormal movements going on in the molecules of the diseased nerve? and is it not possible that it deadened the hyperæsthesia and annulled the pain by virtue of the same quality by which it produces deafness? I give this speculation for what it is worth.

My hope in reporting this case is that others will give the salicylates a fair trial, even in cases in which there is no rheumatic history; and, further, that in making this trial they will steadily increase the dose until an effect is produced or the limits of safety are reached.

A CASE OF BRONCHO-PULMONARY MYCOSIS.

BY WILLIAM F. WAUGH, M.D.,

Professor of Practice, etc., in the Medico-Chirurgical College.

PERHAPS no other plan of treatment recently proposed has excited so much attention as Cantani's novel method of treating consumption by bacteriotherapy. The singularity of the therapeutic measure, and its apparently logical deduction from recent developments in bacteriopathology and biology, combine to invest it with peculiar interest. But, whether the inference be logical or not,—whether the introduction of bacterium termo into the pulmonary tract, as an antagonist to the bacillus tuberculosis, be a genuine addition to our therapeutic armamentarium, or perchance may turn out to be rather a bringing of the Saxons into Britain,—there are two questions which should be settled before the experiment is made on a large scale.

First, Is the introduction of bacterium termo a safe and harmless procedure? Second, Is it efficient in this case? Both questions should be settled before the method is applied in the treatment of pulmonary tuberculosis; and both could readily be determined by experiments on animals.

Perhaps the history of the following singular case may assist in answering the first question.

The patient is a man, 25 years of age, spare in habit, with delicate digestive organs. His father, when young, had bronchial hemorrhages, but is still alive and reasonably healthy. One member of the family died of phthisis. During the preceding year the patient had suffered with a vesical affection, but had been quite well for some months before the present illness began. He was connected with the management of a cemetery.

One day the body of a woman was brought to this cemetery, with a certificate which gave pulmonary consumption as the cause of her death. Her natural weight was one hundred and thirty pounds, but shortly before her death she had rapidly increased, until the body weighed two hundred and twenty pounds when she died. The body was placed in a crypt in the receiving vault.

Some time subsequently the workmen reported to Mr. B. that there was something wrong with this vault. The door was opened, when it was found that the floor was covered with a putrid substance, which was traced to the crypt in which this body had been deposited. The body of the consumptive woman had burst, and the fluids had overflowed from the coffin and escaped from the crypt.

The stench was pronounced to be something indescribable. So terrible was it that the employees of the cemetery, men who may be supposed to be fully familiarized with such things, could not be induced to enter the vault to clean it out, until Mr. B. set them the example by going down into it himself. Previous to this, large quantities of carbolic acid and of chloride of lime had been thrown into the vault; but even by this means the stench could not be overcome.

As soon as Mr. B. entered the vault and began to inhale fully its mephitic air, he began to shiver and experience the sensations known as "taking cold" in the most intense form.

After remaining at his home for some days, on September 20, 1886, he presented himself at my office. He could scarcely talk for the constant cough. He had a temperature of 102.5°, and stated that he had had night-sweats. There was some redness of the fauces, which disappeared after a few applications of tannin; but the cough was but little relieved. The expectoration was of thin, colorless fluid, very abundant. His sleep was greatly disturbed by the constant coughing. Altogether it was a typical bronchorrhœa.

In the first number of *Progress*, a little foot-note stated that a valuable indication as to

the nature of lung-affections could be drawn from noticing whether the sputa dried up, as a simple bronchial discharge dries up in a few hours, whereas tubercular sputa liquefy and become pure cultures of tubercle-bacilli. Recollecting this, I inquired of Mr. B. if the sputa became dry, and he at once responded that he had noticed with surprise that they did not, but that, after remaining in a receptacle from morning till evening, the masses were even more fluid than when first expectorated.

It appeared evident that here was an infection of the pulmonary region with some morbific agent. But with what? Was it due to the inhalation of the carbolic acid, of the bacillus tuberculosis (presumably the cause of the woman's death), or of the bacterium termo, the agent of decomposition, which evidently was at work in the fetid vault?

His body exhaled the odor of the acid for days after he entered the vault. But the action of this agent, which might set up a broncho-pneumonia, would not account for the bronchorrhœa.

To settle the question, I procured a specimen of his sputa, and sent it to Dr. De Lannoy, of the Medico-Chirurgical College, with a request that he should examine it microscopically. I subjoin his reply:

"PROFESSOR WAUGH,—The sputum, which I examined very carefully, contains *no tubercle-bacilli, but fairly swarms with putrefactive forms, the so-called microbacteria; these occur in zoöglœa as well as in chains.*

"The epithelium from the air-vesicles is strongly pigmented. This change is to be attributed to broken-down blood-corpuscles which have parted with their coloring matter.

"If this sputum be perfectly fresh, it certainly does, as such, contain an extraordinary number of microbacteria.

"From what you said of the trouble, I judge it to be lodged in the smaller bronchi. The presence of vesicular epithelium, pathological in character, would corroborate this, and the necessarily long-continued retention of the expectorated matter might account for the large number of micro-organisms.

"Yours very truly, C. W. DE LANNOY."

During the succeeding two months the patient improved somewhat under a carefully-directed treatment, but did not recover his accustomed health. Full alimentation was enjoined. The ordinary remedies for bronchorrhœa were tried, including Griffith's mixture, cubebs, copaiba, lactophosphate of lime, turpentine, and benzoin. The use of hydronaphthol with an atomizer proved more beneficial than anything else which I tried.

But after two months of treatment I was compelled to send him to San Antonio, Texas. At the time he departed his fever had not quite disappeared, and the expectoration had diminished greatly, but still retained its fluidity, and if treatment were suspended for a few days it increased to its first proportions.

Since his arrival in Texas he has improved very much, has increased thirty pounds in weight, and has gained in strength and in spirits. The cough and expectoration have decreased, the fever scarcely ever appears, but he has on several occasions expectorated a little blood. From his letters I judge that a certain amount of pneumonic phthisis has supervened. An examination by a skilful physician of San Antonio failed to detect any sign of tubercular disease or of tubercle-bacilli in the sputa. I do not as yet feel justified in allowing Mr. B. to return to this climate, especially at this season. The improvement still continues, and in all probability he will make his permanent home in Texas.

Altogether, this appears to me a case of infection with putrefactive bacteria. It shows that *Progress* went too far in claiming the liquefaction of the sputa as a certain sign of tuberculosis, as it may be due to the presence of other bacteria. It may throw some light on the etiology of other cases of bronchorrhœa, not colliquative in character. Finally, it should make us cautious in instituting extended trials of Cantani's method, until experiments on inferior animals have demonstrated the value of bacteriotherapy as compared with its dangers. At any rate, it seems better policy in the human body, as in the body politic, to strengthen the system against the attacks of the enemy rather than to introduce foreign auxiliaries.

RENAL INADEQUACY AS A CAUSE OF INSOMNIA.

BY LAMBERT OTT, M.D.,

Member of the Philadelphia Neurological Society.

THIS subject—renal inadequacy as a cause of insomnia—was called to my notice incidentally while having a case under treatment. The patient was a man,

aged 30 years, leading a sedentary and literary life. He endeavored by out-door exercise, good habits, and careful meals to avoid the many physical and mental perversions which usually beset the hard-working *littérateur*. He had occasional and apparently causeless attacks of sleeplessness, occurring sometimes in the earlier parts of the night, and oftener after the midnight hour. He has often lain from two to six o'clock in the morning, utterly unable to sleep, but not suffering pain or headache; nothing more than great restlessness, a tossing from one side of the bed to the other, lying awhile on the back, then on the side, and so on, changing every few minutes; and when he determined to remain in one position until sleep came, an indescribable tired sensation and soreness pervaded the body, especially the limbs, and before his will-power could intercept the act his body had involuntarily changed to another position.

I tried all available means to effect a cure, and upon asking for a sample of urine for examination he informed me that in those nights when he suffered most there was very little urine passed. Accepting the hint, the next bad night I had the quantity measured, and found that from seven in the evening till six o'clock the next morning he passed only one-half ounce, the following day passing the usual amount. I examined this half-ounce of urine passed, and found it scant in sediment, not highly colored, slightly acid in reaction, negative as to albumen and sugar, and normally proportioned as to uric acid and urates, and increased as to triple phosphates and oxalate of lime.

In obedience to my directions, he took more out-door exercise, and drank water freely, with an improvement in his sleep and a nocturnal increased flow of urine. He took at the same time digitalis three times daily for an irritable heart, which, by increasing the intravascular pressure, indirectly assisted in causing the greater secretion of urine. He improved under this treatment, the insomnia disappearing. Later he disregarded my precautions, and relapsed, having sleepless nights and a scanty flow of urine. The urine was examined with the same results.

First night of insomnia he passed one-half ounce of urine; second night, one and one-half ounces; third night (treatment instituted), six ounces.

During the relapse he passed the following quantities: First night of insomnia, three-fourths ounce; second night, three ounces; third night (treatment instituted), eight ounces.

He occasionally relapsed, and during these sleepless nights he had always renal suppression. Repeated examinations for albumen and sugar were negative; but an abundance of phosphates and oxalate of lime was found.

The question arises, Is the renal inadequacy a cause or an effect of the nervous disturbance? Reasoning from analogy, we may conclude that it is the cause. In the lighter forms of uræmia there is sleeplessness preceding the convulsions and coma. Is it the retention of the urine-salts or the altered intravascular pressure that is the disturbing element? These are questions to be solved.

The treatment most successful was as follows. Copious drinking of water two hours before going to bed, and just before retiring a full glass of beer. During the waking hours he took digitalis, added to a general hygienic regimen. The patient noticed that when he diminished the quantity of drinking-water at the time there was a tendency to insomnia he rested badly, and it seemed as if the gradations of sleep were regulated by the quantity of water drunk. The case is of interest, and may suggest research leading to a valuable clinical discovery.

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TRANSLATIONS.

Operative Treatment of Empyema.—M. Guermonprez, of Lille, reported to the Société de Chirurgie the case of a man, 27 years old, who had pain in the right side of his chest, cough without expectoration, and dyspnœa. Later a most fetid expectoration appeared, with increasing emaciation and weakness, and an abscess pointed in the ninth intercostal space. When opened, it was found necessary to resect portions of the ninth and tenth ribs. The pleura was much thickened, and a circumscribed empyema was detected. A superficial slough was removed from the pulmonary surface, and a drainage-tube inserted. A return of the symptoms was relieved by frequent washing out of the abscess-cavity with

corrosive sublimate solution, and recovery followed.

The question of the surgical treatment of empyema has also been discussed by A. Kasauli (*Wratsch*, 1886) in a report of twenty-one cases in the surgical wards of the Odessa Hospital, under Dr. Duchnouski. The cases were principally young soldiers, the empyema usually succeeding upon a croupous pneumonia, but in three there was tuberculous disease of the lung and pyo-pneumothorax. Ten of the cases died,—five with tuberculosis, one with tetanus, one pericarditis, one septicæmia, and two from exhaustion. Of the others, three retained a fistulous connection; eight recovered completely, with a linear scar at the point of operation. Fifteen out of the twenty-one cases required resection of one or more ribs; in one case the resection was performed on both sides. The drainage-tube remained *in situ*, on an average, about thirty-four days; the bandages were removed only every three or four days; the pleural sac was very seldom washed out. The patients recovered, on the average, in about forty-four days. The method of Dr. Duchnouski is as follows. In case of large collection of fluid and displacement of the heart, a preliminary aspiration is made from seven to ten days in advance, so that by the time of operation the organs have resumed an approximately normal position. A bottle about one-fourth filled with sublimate solution is attached to a rubber tube, the end of which dips beneath the surface of the solution. As soon as a portion of the rib is removed, a small opening is made into the pleura and the drain inserted; it is then stitched to the skin, fastened with a spring clamp, and attached to the gum tubing and bottle. After the antiseptic dressings have been applied, the clamp is to be removed, and the pus flows gradually through the tube into the bottle. On account of the pressure in the pleural cavity, the solution does not ascend into the chest. At the end of twenty-four hours the bottle is changed, and the quantity of pus measured. Forty-eight hours after the operation the bottle is to be removed, and the pleural wound enlarged, irrigated, and drained. Antiseptic dressings are then resumed. By this procedure, irritation of the pleura, hemorrhage, violent coughing, and dyspnœa are avoided. This has given very satisfactory results.—*Centralblatt für Chirurgie*, No. 10.

TREATMENT OF DIPHTHERITIC CROUP DURING THE PERIOD OF INCUBATION.—Dr. Dumas broaches the question in the *Bulletin Général de Thérapeutique*, January 30, "Is there any antiseptic medication for croup during its incubation period?" After the disease has become developed, treatment of all kinds is often futile. Cases differ very widely, however, in their degree of malignancy. In the same family in which fatal cases occur, others may appear in which the disease is confined to a patch of false membrane on the tonsils without other symptoms. The problem sometimes arises as to the treatment of children or others known to have been exposed to contagion. In such a case it is an assumption warranted by experience that they will have an attack of diphtheria. When such an exposure has occurred, the usual course followed is isolation of the cases, frequent examinations of the throat, and attempts to destroy the false membranes immediately upon their appearing by applications of perchloride of iron, papayine, lemon-juice, etc. These, with pepsin solution, are to be preferred to nitrate-of-silver applications, formerly so highly praised. Dumas has used for several years the tincture of iodine as a preventive of diphtheria, given after exposure, in the following combination:

℞ Aquæ, 80 G.;
Aquæ aurantii florum, 20 G.;
Tincturæ iodi, viii gtt.;
Potassii iodidi, 10 cgr.;
Syrupi, 20 G. M.

To be taken in twenty-four to thirty hours, in half-teaspoonful doses. To be continued for about a week.

In several cases in which this antiseptic treatment has been used the results have been satisfactory. It is quite innocuous, and no bad symptoms have been observed.

This method is certainly worthy of a trial in hospitals for children, and in infant asylums, where croup often prevails.

HYDROCELE TREATED BY INJECTIONS OF CORROSIVE SUBLIMATE.—An aqueous solution of one to one-thousand of the bichloride of mercury, used in the same way that tincture of iodine has been employed in the treatment of hydrocele, is advocated by Sarrazin (*Thèse de Paris*, 1885, No. 190). It is aseptic, although it acts as an irritant and causes slight pain; inflammatory reaction ensues, and adhesion takes place.

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PHILADELPHIA, APRIL 16, 1887.

EDITORIAL.

THE NEUROTIC COMPLICATIONS OF DIABETES.

THE nervous disturbances complicating diabetes have attracted the attention of a number of careful observers. Disturbances of sensation, such as diminution of the tactile sense, formication, itching, and pricking, are more or less frequent symptoms. Pruritus vulvæ has long been recognized as a symptom of the disease. Pains in the joints simulating rheumatism are also sometimes observed. A practical point of some importance is that these pains rapidly yield to salicylic acid. This drug has lately been used to a considerable extent and with some success in the treatment of diabetes itself.

Among the most frequent and characteristic sensory disorders of diabetes is an uncomfortable feeling of weight and fatigue in the thighs. This is not much increased by exercise and not mitigated by rest. In fact, it is generally more decided in the morning, on arising from bed. During the day it seems to diminish, sometimes passing off entirely.

Another frequent symptom is headache. This is sometimes merely a sensation of pressure or heaviness; at other times neuralgic pains in the frontal, occipital, and post-cervical regions; and occasionally a typical "sick headache."

Sciatic neuralgias, generally bilateral and extending to the sural and plantar branches, are occasionally present in diabetes. The pains are very severe, and often suggest some structural disease of the spinal cord. According to Ziemssen, these neuralgias are partly, at least, due to a neuritis. The nerve-pain may also be localized in the dental and intercostal nerves, or in one of the internal organs,—stomach, ovaries, kidneys, or uterus.

Motor pareses or paralyses, in combination with sensory disturbances, are also observed sometimes. A case is recorded by Lecorché in which tetanoid spasms accompanied by pains occurred in the forearms and legs. Cases not infrequently simulate locomotor ataxia, many of the characteristic symptoms of the latter disease being present, including the abolition of the patellar tendon reflex. In fact, absence of the tendon reflex seems to be a frequent symptom of diabetes, for in the statistics of Bouchard, who first called attention to the relation of the knee-jerk to diabetes, this phenomenon was absent in thirty-seven per cent. of the cases. This observer's figures show further that the abolition of the patellar tendon reflex is a symptom of grave omen in diabetes.

Several cases have been reported in which sugar appeared in the urine during the course of multiple sclerosis. The explanation offered for this is that a sclerotic plaque in the floor of the fourth ventricle gave rise to the glycosuria. In these cases the knee-jerk was increased, and no other symptom of diabetes beyond the saccharine urine was present.

In the neuralgic and paretic complications of diabetes, massage and the constant galvanic current are serviceable, in addition to the usual well-known remedies addressed to the morbid condition of the system. Among the latter, opium, codeine, salicylic acid, and ergot seem to promise most success.

HYPNOTISM IN A NEW RÔLE.

SINCE the observations of Braid in 1842 upon provoked somnambulism, many volumes and essays have been written upon this neurosis. Of late years a number of new facts have been brought

to light, especially by the studies of Charcot and Richer at the Salpêtrière, and of Dumontpallier, Bernheim, Beard, and others. In minor surgery, hypnotism, as this state of artificially-induced somnambulism has been called, has proved a valuable expedient. Esdaile and others have reported a large number of surgical operations performed while the patient was in this state, without consciousness or suffering, although no anæsthetic was given. The same expedient has been recently resorted to in Germany in childbirth, with reported satisfactory results; and experiments are now making with this expedient in treating mental disorders, with fair promises of success.

At the meeting of the Académie de Médecine* (March 15) M. Mesnet reported the details of a remarkable case of a young man, 19 years of age, who had been a somnambulist since his thirteenth year, and had once been arrested for pilfering from a merchant's stand while in this peculiar mental state. Being taken to the Hôtel-Dieu, he exhibited most decided evidences of somnambulism: anæsthesia and analgesia were complete, and there was also loss of temperature-sense except in certain symmetrical regions. Hypnotism was readily induced by the usual method, and the ordinary phenomena were exhibited. Upon restoration of consciousness there was no recollection of what had passed; but, upon inducing hypnotism again, the memory was restored of what had occurred in the preceding condition.

Among other orders given to him were to return upon the day after to-morrow and to purloin the watch from the pocket of a certain by-stander. At the appointed time he passed into the hypnotic state, and at once performed the act without any prompting. Subsequently the patient had a severe attack of hystero-epilepsy, and upon recovering his senses seemed entirely unaware of what had occurred.

The possibility of human automatism being admitted, the medico-legal relations of such cases deserve study. A similar case, that of a young married woman who asked for divorce upon the ground of undue influence, some months ago was the sensation of the hour in Paris courts, and has already attracted the attention of the novelists.

Our courts of law, already puzzled with the question of moral and legal responsibility in neurotic subjects, will find hypnotic automatism quite as difficult a problem to decide.

* La France Médicale, No. 33, 1887.

STATE BOARD OF HEALTH.

THE sixth regular meeting of the State Board of Health was held in Harrisburg on Thursday, April 14. While much routine business of importance to the State was transacted, the chief interest of the occasion to the public centred in the annual address before the Board, which was delivered in the hall of the House of Representatives on the evening of the same day, by the Hon. E. A. Wood, M.D., of Pittsburg, formerly a member of the State Legislature, and well remembered by his colleagues in that body as a brilliant, forcible, and witty speaker. His address was worthy of the occasion, and constituted an intellectual treat to all who had the good fortune to be present.

THE PHILADELPHIA COUNTY MEDICAL SOCIETY held a stated meeting on the 13th instant, and again put itself upon record in opposition to the American Medical Association upon the question of the right of women to membership. The Council, among other candidates, nominated Dr. Anna E. Broomall, who failed, however, to get the requisite two-thirds vote.

LEADING ARTICLE.

OBSERVATIONS ON THE OCCURRENCE OF FREE HYDROCHLORIC ACID IN THE STOMACH; ITS RELATION TO DIGESTION, AND THE DIAGNOSTIC IMPORT OF ITS INCREASE OR DECREASE IN DISEASE.

INCREASED attention has been directed during the past few months, on the continent of Europe, to this subject, which has been almost totally neglected in America.

Among the numerous investigations reported, we notice the careful studies of Riegel as particularly worthy of attention (*Zeitsch. f. Klin. Med.*, B. xi. H. 2 and 3). In one year he made thirteen hundred and seventy-nine chemical examinations of one hundred and twenty-two cases, and concludes that there are four conditions of the secretion in diseases of the stomach: 1st. It is normal. 2d. Free HCl and the peptic strength is diminished or absent. 3d. The amount of the organic acids is increased, although HCl is also present. 4th. There is an excessive secretion of HCl.

He departs from the method of Leube,—who uses some irritant, as ice-water, to excite the secretion of the gastric juice,—and pursues the following plan. He gives the patient a meal consisting of a mixed diet, and, after six or seven hours, removes the *undiluted* gastric contents with the sound. Digestion should be complete after seven hours; therefore, if any portions of undigested food remain, it is a proof that the process has been abnormally delayed. The matter obtained is tested for its reaction and peptic strength, and for the presence and amount of free HCl and of the organic acids. He states that vomited material cannot be utilized for purposes of examination, a fact corroborated by our own experience. Free HCl does not normally occur in the stomach until about three hours after the ingestion of food, and vomiting usually takes place before this time has elapsed.

He claims that HCl is almost constantly absent in *carcinoma ventriculi*, and that the peptic strength is lacking. This absence of acid is the surest symptom of the disease, and where acid is present he thinks the diagnosis of carcinoma is not warrantable. During an experience of seven years he has never known this sign to fail. In certain cases also of a reflux of bile into the stomach he found HCl and pepsin absent.

On the other hand, in *ulcus ventriculi* the quantity of free HCl is usually increased. In *simple dilatation* the acid is almost always present, and is sometimes increased in amount, and the organic acids are often abundant; while in *chronic dyspepsia* there is oftener an increase than a diminution of the quantity of HCl,—contrary to the view very generally held. Lactic acid persists in this disease for a longer time after meals than is normally the case.

In some clinical observations in the *Deutsche Med. Wochensch.*, Nos. 47, 48, and 49, 1886, Korczynski and Jaworski detail the examination of fifty-two cases of ulcer or of cancer of the stomach. The function of the viscus was tested in three ways. 1st. Aspiration after strict fasting was practised. If nothing was obtained, one hundred cubic centimetres of distilled water were ingested and the operation repeated, and the gastric contents chemically tested. 2d. A modified Leube's ice-water method was employed. 3d. The digestive power of the stomach was tested by the ingestion of portions of boiled white of egg, the contents of the stomach being then aspirated after a certain length of time. Their results confirm the statement made by Riegel and others, that free HCl is absolutely essential to digestion, pepsin alone not being sufficient. This is certainly a matter to be remembered in our treatment of gastric disorders.

In twenty-four cases of *ulcer* they found the gastric secretion always increased in quantity, present even after fasting, and always containing a considerable amount of HCl.

In twenty-eight cases of *cancer* digestion was always retarded, and in many instances the stomach was found to contain remnants of food, even after fasting. HCl was present in but two patients, both under thirty years of age.

The authors conclude that free HCl is almost invariably absent in cancer, but do not agree with Riegel that this is due to the action of the cancerous juices upon the gastric secretion, rather believing that an already established mucous catarrh, with an absence of HCl, as seen in old

persons, predisposes to the development of the neoplasm.

The modified Leube's ice-water method referred to is described by Jaworski and Gluzinski in the *Zeitsch. f. Klin. Med.*, B. xi. H. 2 and 3. It consists in the administration by the sound of two hundred cubic centimetres of ice-cold water upon an empty stomach. The sound is then withdrawn, and after ten minutes reintroduced and the contents of the stomach aspirated, without the addition of more water.

Sansoni (*Rivista Clinica*, No. 10, 1886) has made a careful study of four cases of cancer, and found HCl in no instance. In numerous other cases, not cancerous, HCl was always present in men, but often absent in women, especially in hysterical subjects. He thinks this is due to a longer continuance of the food in the stomach of women, and the subsequent absorption of the acids by the peptones. He considers the absence of free HCl an important corroborative sign of carcinoma.

Many writers have disputed the statement that free HCl is absent in cancer of the stomach. Among the more recent of these are Cahn and V. Mering (*Deutsch. Arch f. Klin. Med.*, B. xxxix. H. 3 and 4),* who claim that the methyl-violet test usually employed is entirely unreliable, since other substances besides HCl may give the same reaction, and still others may hinder or conceal it, though the acid be present. They have, therefore, made accurate chemical analyses of the secretion, and reach the conclusion that both lactic and hydrochloric acids are present with a mixed diet, while with animal diet the latter alone is to be detected. They believe, too, that HCl is usually present in cases of carcinoma, although perhaps in smaller quantities than usual. On the other hand, it may be occasionally absent in fever and in severe anæmia. In this connection we may note that Ewald claims that lactic acid develops even after a purely animal diet.

Yet the greater weight of evidence goes to show that the absence of HCl, at least as indicated by the ordinary tests, is a very important diagnostic sign of carcinoma. The subject is certainly worthy of the attention of American physicians.

Regarding the tests which have been employed, Riegel advocates tropæolin, methyl-violet, and Congo paper for HCl, and Uffelmann's carbolated-iron test for lactic acid. Numerous others have been recommended. Our own experience has led us to put most faith in the methods with methyl-violet and carbolated iron. We have made no trial of Congo paper, and tropæolin and fuchsin have proved unsatisfactory. The tests are easily performed as follows:

1. To a weak aqueous solution of methyl-violet in a test-tube, add a portion of the filtered gastric contents. The violet color becomes distinctly blue if HCl be present. The test is delicate for one and one-fourth parts HCl in one thousand of the filtrate.

2. Make a mixture of an aqueous solution of the sesquichloride of iron and a very concentrated solution of carbolic acid. The quantities are best determined by experiment. An amethystine-colored fluid is produced, which becomes a bright yellow when added to the filtrate, if lactic acid be present. This test-fluid must always be freshly prepared. The reaction is delicate for one-half in one thousand.

We should not fail, too, to test the peptic strength by allowing the filtrate in a test-tube to act for a certain time upon a portion of boiled egg-albumen. This should be done at a slightly-elevated temperature, to obtain which the heat near the kitchen-range will answer if no thermostat be available.

J. P. Crozer Griffith, M.D.

* See also article on the Gastric Juice in Acute Phosphorus Poisoning and in Pyrexia, by the same observers, *Zeitschrift für Phys. Chimie*, Bd. x. H. 6; also this journal, page 187, *ante*.

NOTES FROM SPECIAL CORRESPONDENTS.

LONDON.

THE hope that some of the Erasmus Wilson bequest may be used for founding surgical research laboratories has been cherished by many of the younger generation; but few perhaps were prepared to see so unanimous an expression of opinion from old and young as is contained in a memorial addressed to the Council of the Royal College of Surgeons and signed by all the teachers of surgery in London not on the Council, with, it is said, two exceptions. The memorial points out that laboratories are sorely needed for the study not only of morbid anatomy, but also of experimental pathology, including bacteriology and experimental operative surgery. The anti-vivisectionists, perceiving an opportunity, are taking steps to

work upon the fears of the Council and to raise a popular agitation against the proposal. For the last few years, however, their efforts to put increased obstructions in the way of scientific progress have not been very successful; most reasonable laymen are satisfied that the practice of vivisection is under sufficiently severe restrictions already. It is otherwise, however, with a certain noisy knot of lay-women.

The British Medical Association meets this year in Dublin. The President of the meeting will be Dr. John T. Banks, Regius Professor of Physics in the University of Dublin. An address in medicine will be delivered by Professor Gairdner, of Glasgow; in surgery by Professor Edward Hamilton, of Dublin; and in public medicine by the senior Fellow of Trinity College, Dublin, the Rev. Samuel Haughton, physicist, physician, anatomist, mathematician, divine, and politician,—the very embodiment of the ideal cultivated Irishman and of Coleman's *five* single gentlemen rolled into one,—mentally, that is to say. The meeting begins on August 2, and ends on August 5, thus leaving a clear month before the date fixed by the International Medical Congress at Washington. It will be possible to visit Killarney, Donegal, and other places of interest in Ireland, and then to catch steamers to America at Queenstown or Lough Foyle. The Local Honorary Secretary of the Dublin meeting is Dr. George F. Duffey, of 30 Fitzwilliam Place, Dublin.

There seems to be no doubt that laparotomy is being performed in England much more frequently than was the case even a year ago. It has been resorted to in a considerable number of cases of acute peritonitis, and mention is made of cases of abdominal injury in which it has been used. For instance, Mr. Croft recently operated on a man in St. Thomas's Hospital who was admitted for abdominal injury, with blood in the peritoneum. The hemorrhage was found to proceed from a ruptured spleen; the organ was excised, but the man succumbed. It seems, however, safe to prophesy that this operation will some day be successful. Many animals have survived excision of the spleen, and a black-and-tan terrier upon which Professor Gamgee had performed the operation a good many years ago used to be a familiar visitor at the Jodrell Laboratory at University College, looking the picture of sleek health.

In another case of abdominal injury with symptoms of acute peritonitis in a man, Mr. Croft opened the peritoneal cavity and found that the small intestine had been ruptured. The peritoneum was thoroughly washed out, the two ends of the severed intestine secured in the abdominal wound, and the man has since been doing well. It is also stated that Mr. Walsham has treated a case of rupture of the bladder by laparotomy, sewing up the wound in the bladder and washing out the peritoneum. The man, it is reported, was convalescent in a few days.

Dr. Mitchell Banks read a paper recently at the Harveian Society of London in which he recommended that in operating for mammary cancer the surgeon should excise the whole mamma, with the overlying skin and subjacent parts, and should open up the axilla and tear out all lymphatic glands, whether enlarged glands could be felt before operation or not. Statistics given by Mr. Banks showed a higher mortality, but Mr. Harrison Cripps thought that this need not be the case if there were no "septic surroundings." Mr. Butlin severely criticised Dr. Banks's proposition, and quoted statistics which really seemed to prove too much,—namely, that recurrence occurred earlier after the more extensive operations. He, however, himself suggested the explanation, which doubtless is that the cases where enlarged glands cannot be felt in the axilla, and in which therefore most operators would not open the axilla, are those which are least malignant or in the earlier stage.

Professor Virchow, during a short visit to this country, was shown a number of cases of spontaneous myxœdema in man by Dr. W. N. Ord, and the "operative myxœdema" which has been noticed in monkeys after excision of the thyroid gland by Mr. Victor Horsley. From a paper which he has since published, it would seem that the great pathologist has been led by what he saw in this country to modify materially the views he expressed at the Copenhagen Congress. He is a convert to the doctrine that myxœdema and the "cachexia strumipriva" of Kocher are one and the same disease, in some way inextricably connected, in the one case with atrophy or destruction and in the other with ablation of the thyroid gland. The Clinical Society here appointed a committee two years ago to inquire into the nature of myxœdema, and so far as regards the general etiology, symptoms, and morbid anatomy, the report is almost ready. A circular has been sent to every surgeon in Europe known to have performed thyroidectomy, asking whether symptoms of myxœdema (cachexia strumipriva, *myxœdème opératoire*) have been observed to follow the operation. None of these circulars have been sent to America, because it is not known to the committee that the operation has ever been performed there; but if any of your readers have had cases, I am asked to say that Dr. Felix Semon (39 Wimpole Street, London) would be glad to have particulars of the results, and, not least, if in any of the cases thyroidectomy had been performed without resulting myxœdema.

The Clinical Society at its last meeting appointed yet another committee, consisting of Messrs. Christopher Heath, Howard Marsh, Haward, Rivington, and R. W. Parker, to re-

port on the treatment of scoliosis. The question was raised by a paper read by Mr. Keetley, in which he contended that a test case treated by Mr. Bernard Roth, who advocates a course of gymnastics as the best line of treatment, had not been improved by the method, but that, on the contrary, the curves had increased and the patient had lost in height, though she had improved in spirits and muscular strength. Mr. Roth responded with some warmth, protesting that unless his reply was also published it would be unfair to publish Mr. Keetley's paper in the Transactions. Whereupon the committee above mentioned was appointed.

Several cases have recently been reported in which chronic obstruction of the bowels has been produced by gallstones. There can be little doubt that calculi sufficiently large to produce this result must find their way into the duodenum or some other part of the intestine through a direct fistulous communication between the gall-bladder and the gut. Dr. Pye-Smith mentioned two cases at the Pathological Society's last meeting in which there had been no history of any attacks of abdominal pain or biliary colic, the first symptoms being those of gradual intestinal obstruction. In other cases the symptoms, however, are more acute, and I have heard of one, not yet published, in which laparotomy was performed, and the calculus, which was tightly grasped by an inflamed section of small intestine, was removed through an incision in the gut. The patient, unfortunately, did not recover.

During a short discussion on the treatment of syphilis at the Medical Society recently, Dr. Lauder Brunton discussed the germicide theory of the action of antisyphilitic remedies. Mercurial salts are germicides, and iodine is a germicide; but iodide of potassium, the drug which is so universally given in the later stages of syphilis, is not germicidal. His conclusion was that while it was probable—or perhaps it would be more correct to say not improbable—that mercury acted on the disease-germ, iodide of potassium acted on the diseased tissues. The iodide is a very diffusible salt, and probably its chief action is to stimulate the nutrition of the tissues, and especially of the cell-elements. It is a favorite doctrine with those who look at therapeutics solely from the chemical side that mercury and iodide of potassium ought not to be given together, because the latter hastens the elimination of the former. The theory, however, appears to assume that it is advantageous to store up mercury, to let it accumulate in the tissues; whereas the true aim is to stimulate tissue-growth by the iodide, while at the same time the injurious influence of the syphilitic poison is held in abeyance by the mercury, the hope being that the new tissue-elements produced under these conditions will be healthier than those they replace. Mr. Milner, who started the discussion mentioned above, recommended the green iodide of mercury, Donovan's solution, and iodide of sodium in the treatment of syphilis in hard livers who drink to excess, while using inunction in more abstemious persons, and in dark-complexioned people with a tendency to the tubercular form of syphilide.

Professor Victor Horsley has given a lecture at the Royal Institution, on "The Brain-Surgery of the Stone Age." It is a novel subject in this country, though the Broca Museum of Anthropology in Paris contains ten almost perfect crania and fragments of sixty others illustrating the fact that the men of the polished stone age used to trephine with considerable frequency. Clearly many of the patients survived the operation, for the majority of the crania showed pathological changes only to be accounted for on that supposition. As nearly all the trephine-holes were in the motor areas, it seems probable that prehistoric man only trephined for traumatic epilepsy: that is to say, when a fracture of the skull led to convulsions, he trephined at the seat of fracture and removed a circle from the fractured bone. The fragment thus removed appears to have been regarded with superstitious reverence, and was worn as an amulet.

By a singular piece of good fortune, Mr. Henry Morris has been able to record the sequel of a case which he published in 1879 as an example of recovery from rupture of the bladder. The man died last August, from peritonitis due to a fresh rupture of the bladder. The fundus of the bladder was attached to the rectum by a band hollow at its vesical end; the second rupture had occurred at this hollow part. A committee consisting of Messrs. Savory and Bryant, Drs. Goodhart and Kingston Fowler, reported that the bladder presented all the features which might be expected at a remote period after rupture. The treatment under which the recovery took place consisted of hot fomentations to the belly, half a grain of opium by the mouth every six hours, and the retention of a gum-elastic catheter just within the neck of the bladder. Mr. Morris thinks that the case is strong evidence in favor of treating rupture of the bladder by continuous catheterization.

Mr. W. H. Power, one of the medical inspectors for the Local Government Board, seems to have proved conclusively, so far as statistics can prove anything, that, in some way not easy to understand, a smallpox hospital in a town causes a greater incidence of smallpox in its immediate neighborhood. He has taken the statistics for a great many hospitals, and has written a number of reports to his Board on the subject. One of the most recent relates to the smallpox hospital at West Ham. He found that within an area contained by a circle described three-quarters of a mile from the hospital the death-rate

from smallpox was much higher than in other parts of the same districts; it was never less than twice, and had risen to ten times, the general rate. Mr. Power has also given statistics which tend to show that the number of cases shows a progressive decrease on passing from the immediate neighborhood of the hospital in every direction. No explanation has yet been afforded of the influence of the hospitals. It seems to be independent of the winds, and the explanation at first suggested —that it was due to clandestine or accidental communication between the hospital inmates and attendants and the neighbors—is now found to be inadequate.

England, but especially London, has been recently visited by an epidemic of severe diarrhœa, characterized by severe cramps, chiefly in the lower extremities, watery stools, and great prostration. The cases have been scattered, and no common factor has yet been discovered to account for the wide prevalence of the malady at this time of the year. Cholera has appeared in Sicily recently; but had it been a little nearer, and had the year been a little more advanced when this epidemic of diarrhœa arose, there would undoubtedly have been a scare.

There would seem to be no end to the misfortunes of Guy's Hospital. During the last five years half the physicians and assistant-physicians have died. First Hilton Fagge, then Mahomed, and then Walter Moxon; and now, last week, Dr. R. E. Carrington has succumbed to pleuro-pneumonia after only three days' illness. It is not yet many months since he completed his task of assisting Dr. Pye-Smith to bring out the "System of Medicine" which Dr. Hilton Fagge left unfinished. Dr. Carrington was a man of modest and retiring manners, and was greatly admired and beloved by the students of Guy's Hospital. Dr. Moxon used to contribute short essays to the *Guy's Gazette* ten or twelve years ago. These essays, which are always ingenious and often brilliant, were signed by the curious *nom de guerre* Pilocereus Senilis. A small volume has just been issued by Mrs. Moxon, bearing this name as title. It contains the essays from the *Guy's Gazette* and three addresses. One of the shorter pieces, "Dare quam accipere," discusses in a most humorous vein whether this motto of Guy's Hospital was not meant to apply to the stock mixtures dispensed to out-patients.

Two new special hospitals have just been started in London, where we already have too many. Some time ago, in consequence of what was thought to be the high-handed conduct of the managing committee backed by Dr. Morell Mackenzie, who is the consulting physician, the whole of the staff, with one exception, of the Throat Hospital in Golden Square resigned. A new staff was quickly got together, and the hospital has gone on as before. The old staff, however, with two new recruits, Dr. Coleman Jewell and Dr. Edward Law, who have held the post of resident medical officer at the hospital in Golden Square, have started a new hospital in Great Portland Street; Dr. McNeill Whistler and Dr. Woakes are the senior members of the staff. We have thus three special throat-hospitals in London, besides eight or nine special departments attached to general hospitals. Moreover, two journals of laryngology and rhinology are edited in this country: the one the German *Centralblatt*, by Dr. Felix Semon, the other an English journal, on much the same basis, by Drs. Morell Mackenzie and Norris Wolfenden. Why laryngology is so popular is not quite clear; perhaps the reason is that given once to me by a somewhat fastidious physician, who added it to several other accomplishments he possessed: "It is a nice clean specialty, and does not require any very elaborate instruments." My fastidious friend would have revolted if invited to take up dermatology; but this specialty is almost equally popular, and perhaps more lucrative. The second special hospital is a skin-hospital, and it has been promoted by Mr. J. Startin, who not long ago had some difference of opinion with his colleagues at St. John's Hospital for Diseases of the Skin in Leicester Square. Mr. Startin, who has been joined by Mr. Pocock, intends to place his services at the disposal of the "sick and suffering poor" at a house close to Leicester Square.

DAWSON WILLIAMS.

BOSTON.

THE Massachusetts Legislature of the present year, following the example set by one of its immediate predecessors in regard to the pharmaceutical profession, has passed a bill providing for registration of dental practitioners. All persons now actually engaged in such practice are allowed to register without any examination into their qualifications; but all henceforward desiring to commence the practice of dentistry, whether graduates of a dental college or not, are required to pass an examination before a board of five persons appointed for that purpose by the Governor; and such persons, if approved, and no others except graduates in medicine, are allowed to practise as dentists within the State. In the debate on this bill, one of the speakers produced a letter of protest against the measure from a farmer who had, without any preliminary study whatever, taken up dentistry, who said he had made more in three months than he ever did before, and who defied the legislators to stop him. The opinion expressed by another speaker that "the best dentists were bad enough" seemed to meet with general acquiescence, for the bill passed without serious opposition, though the

parent profession, general medicine, has never received like supervision in the State, every attempt to require an examination and registration of medical practitioners having been defeated under the cry of "Monopoly!" Meantime, Dr. York, of the somewhat notorious "Druidic" University of Maine, having been driven out of that State for fraudulent conduct of a medical school there, is said to be about to make his home in Massachusetts, where every one is at perfect liberty to call himself "Doctor," and to practise upon the community, who chooses to do so.

On the morning of March 14, a local passenger train on a branch of the Boston and Providence Railroad fell through a bridge at a point in the suburbs but within the limits of the city of Boston. Five cars were precipitated into the street below the railroad, a distance of thirty feet or more, and great loss of life resulted. Some twenty-six were killed outright, and eighty or one hundred others injured, many very seriously. The Railroad Commissioners of the State are now conducting an investigation into the cause of the disaster, and, though the hearings are not quite completed, it is pretty evident that the accident was due to causes which might have been prevented. The medical features of the catastrophe have been quite interesting. The earlier scenes at the wreck recalled some of the medical service in the late war. Improvised ambulances were on hand with mattresses, bandages, etc., contributed by persons living in the vicinity. Some of the bodies of the dead were greatly mangled, two having the heads severed from the body, and a third having the skull cleft down its middle and one side of the face torn off. Still others were disembowelled and had the legs torn off. One peculiarity about the bodies of the dead and those whose wounds required surgical attention was the blackness of the skin, suggesting almost the action of fire. Fortunately, however, there was no fire, and the color was shown to have been due to the comminution, the actual pulverization, of portions of the car from the violence of the crush. In one person having a scalp-wound, for instance, the attempt to cleanse the hair from this fine dirt before dressing the wound blackened several successive basins of water as if with soot. Yet that the dirt was not altogether soot from the car was shown by the detection in the washings of many little particles of splintered wood. The railroad company have assumed the medical expenses of all the injured, and will doubtless have to pay a much larger sum in damages for the dead and the living.

Dr. John S. Billings, of Washington, has been appointed for the current year Lecturer on the History of Medicine in Harvard University. It is understood that his course is to be given this spring.

Considerable attention has been attracted by statements regarding a recent outbreak of smallpox among the employees of a paper-mill at Holyoke, Massachusetts. The investigation made by Dr. Abbott, of the State Board of Health,—in company with whom the writer had the pleasure of inspecting the cases,—showed that one man who had worked at a duster in which both foreign and domestic rags were treated, and who had never been vaccinated, died of the disease. Two girls who worked in a room in which foreign rags only were sorted were taken simultaneously at about the same time as the man mentioned. These girls boarded and slept together. Neither had typical vaccinal scars. They were obliged, in going to and from their work, to pass through a room where domestic rags were sorted. In the room where they worked thirty or thirty-five women were employed, but no others contracted the disease. Statements were freely published—one of which I noticed in a valuable medical journal of your city—that the health officer had "traced the disease to foreign rags" brought into New York and bearing a certificate of sulphur-disinfection abroad. This is precisely what was not reported by Dr. Abbott, who found it impossible to conclude with any degree of certainty what sort of rags had carried the infection. As a matter of fact, it is generally impossible to differentiate between foreign and domestic rags as carriers of this infection, for nearly all mills make use of both kinds of rags. Indeed, it seems to the writer that, from what we know of the tenacity of life of the variolous poison, there is little reason for trying to make a distinction in this regard between foreign and domestic rags. If the one can bring smallpox, so can probably the other. Of course, in diseases like cholera, where the contagium is shorter lived and has rarely been carried by rags at all, it is fair to require proof, which never as yet, as I believe, has been offered, that foreign baled rags can transmit the disease before admitting that there is a danger of cholera-infection by this commodity.

An interesting dinner was given the other day in honor of Mr. Theodore Metcalf, one of the leading pharmacists of this city, in celebration of the fiftieth anniversary of his starting in the drug business here. Speeches were made by a number of more or less distinguished men, among them William Warren, the veteran comedian, and Dr. Oliver Wendell Holmes. The latter began his professional career in the same building where Mr. Metcalf kept his shop; and, as the speaker said, he used to write the prescriptions, Mr. Metcalf filled them, and the sexton, who lived opposite, was ready to contribute his part towards finishing up the affair. Many pleasant reminiscences were given of the pharmacists of half a century ago, of whom only one or two others still survive.

C. F. W.

Boston, April 5, 1887.

PROCEEDINGS OF SOCIETIES.

PHILADELPHIA NEUROLOGICAL SOCIETY.

A REGULAR meeting of the Society was held at the Hall of the College of Physicians, February 28, 1887, Vice-President Dr. CHARLES K. MILLS in the chair.

I. N. KERLIN, M.D., read the following paper on

MORAL IMBECILITY.

When reporting to your Secretary the title of a paper to be read before you to-night, I had contemplated prefacing four illustrative cases of moral imbecility with a short discussion on the mooted question of moral insanity, but later consideration led me to reserve this for another occasion, as the illustrative cases are somewhat lengthily detailed and will consume all the time appropriated.

For this evening I present for your consideration short histories of four children,—the first, presented by my friend Dr. Carson, of Syracuse, New York, illustrative of the incipient prostitute whose mental incapacity should be her protection; the second case, the incipient burglar; third, an hereditary religious hypocrite and egotist, who if not permanently sequestered will fill a dramatic if not awful rôle in crime; fourth, a confirmed juvenile tramp and incipient confidence man. All four, in the judgment of your reporter, are cases which may be classed under the following descriptive paragraph, which appears in the Thirty-Second Annual Report of our Training-School for Feeble-Minded Children, and which was quoted by Dr. Hack Tuke in a meeting of the Medico-Chirurgical Association of Great Britain and Ireland, receiving from that learned body an equal share of favorable and unfavorable criticism. The paragraph referred to is as follows:

"It is a mournful conclusion, that has been reached after twenty-five years of experience, that in every institution of this kind, and probably to a far greater extent in our refuges and charity-schools, there exists a class of children to whom the offices of a school-room should not be applied: these are the so-called moral idiots, or juvenile insane, who are often precocious in their ability to receive instruction, but whose moral infirmity is radical and incurable. The early detection of these cases is not difficult; they should be subjects for life-long detention; their existence can be made happy and useful, and they will train into comparative docility and harmlessness, if kept under a uniform, temperate, and positive restriction. The school-room fosters the ill we would cure: in teaching them to write we give them an illimitable power of mischief; in educating them at all, except to physical work, we are adding to their armament of deception and misdemeanor."

And now, as illustrative of this particular group, I cite first the case presented by Dr. Carson [an incorrigible girl sexually insane.]*

Tom McK., aged 12, admitted November 9, 1877. When first brought to our knowledge he was described as an incorrigible boy, who had been passed from one county-home to another, through a juvenile reformatory, and at last, to prevent his own self-destruction, because of his propensity to climb the rods and water-spouts of the refuge and to ramble dangerously over its roofings, he was locked in a secure room. Excepting his under stature, nervous manner, and glittering eyes, there was nothing in the aspect of the pale-faced boy to suggest any unlikeness to normal boyhood. Indeed, his aptness in language, both usual and profane, suggested precocity. He was but little more backward in his studies than would be any neglected boy; full of mischief and deceit, he had the usual indifference of a bad boy to punishment morbidly increased. There seemed to be a moral hebetude and a causeless wilfulness that had taken the place of the fretfulness, kickings, and bitings of his earlier childhood.

The boy promptly responded to school instruction; is described in the early weeks as a "nice little boy, who I think will learn." After two years I find the following record. "Is fourteen years old; reads very well in the second part of the 'Child's Book of Nature;' spells long sentences in the *Independent;* can learn a fair lesson in geography; knows all the counties of Pennsylvania; is in fractions, understanding some of them quite well; writes in No. 3 copy-book; has excellent use of his hands; can make a mattress alone, and cane-seated a chair without help; plays the alto horn in the band; writes a good letter; is kind if his sympathies are aroused, but is cruel if left unguided."

Favorable reports continue to be made of his intellectual progress during the next two years. In 1882 he is spoken of by an indulgent teacher as "a healthy, strong, and fine-looking boy, manly and frank;" but notwithstanding these favorable reports, of which many appear on the pages of our school progress, through the seven years of his pupilage there were seizures of irritability and excitement occurring periodically, and of increasing intensity the longer he remained with us.

The inventions of his cruel nature, directed against child and brute alike, cannot be detailed. The vindictiveness with which he followed up any one against whom might be developed a temporary suspicion was satanic. The secrecy with which he could lay plots to steal from his companions, and the adroitness

* This case was published in full in the proceedings of the Syracuse meeting.

with which he covered up his tracks, were those of an expert.

This side of his character may be known to but few of our resident family, the majority being impressed with this bright-faced boy very much as was the indulgent teacher above quoted.

The period of his discharge from the institution had arrived, and Tom was restless to return to his people, and they equally determined to have him do so. Six months after his discharge I was importuned to testify in court for his release from imprisonment. In the brief period following his dismissal from the institution he had already been found guilty of two or more petty burglaries. Benevolent friends had discovered him in prison, freely confessing his offences, and weepingly imploring to be sent back again to the institution. The crimes seemed to be unaccompanied with sufficient motive to make them heinous.

After a thorough and painful review of his whole life with us and the discomforts that must follow his readmission, I was compelled to advise that the course of the law be not interfered with, but urging that an intermediary, such as that at Elmira, should enter the scheme of our penal treatment.

This incorrigible moral imbecile was the son of a man of most abandoned character, who in his paroxysms of drunkenness was a savage. I recently discovered his mother in the insane department of a county-house, one of the saddest of dements. The boy's conception, birth, and childhood—his whole history—had been laid in physical disorder, fright, and dissoluteness.

G. L., admitted July 12, 1883: a sweet-faced, intelligent, lovable boy, whose gentle manners instinctively won confidence, and made his new-found friends at the institution believe that the boy had been improperly consigned to our care by a mother too eager to relieve herself of her proper relations to her own child.

The mother's description of this lad (she withheld some points, we afterwards discovered) is so good that I quote here at length: "He is fourteen years old; large, healthy, well formed; kind-hearted, quick-tempered, very dull of comprehension; seems to lack the power of either continued study or labor; full of good resolutions and promises that are seldom kept; determined to see the inside of everything at any cost; fond of working with any kind of tool; fond of little children, and a lover of horses and dogs. A hearty hater of books: can scarcely read, though he has had at least ten months' term at school. Will listen to verbal instruction and ask questions from morning until night. The average child of eight years has better reasoning powers than he." "He is not malicious, but is destructive; is reckless of danger, not regarding consequences, and I am at a loss to decide whether he cannot or will not weigh them. He will both lie and steal, but neither are common practices. When I have found he was guilty of either, I have always found it was done on the impulse of the moment through sudden temptation. *He will not confess.*"

This interesting boy took an upper place at once in our community. Located in one of the best rooms, associated with the best group of boys, his face shining with sweetness, Guy went along swimmingly for nearly three months. Little meannesses were complained of by his associates, and we found that he had few friends among the boys. Notwithstanding his loveliness to us, he was an object of aversion to them. Instances of cruelty to the feebler children, and petty pilferings from his associates' boxes, opened by ingeniously-twisted hair-pins, made numerous counts against him, of which he was generally forgiven because of the lack of clearness in the testimony and his adroit evasions. He devoutly knelt at his bedside every night, was thoroughly up in Romans, Timothy, and the Beatitudes, and stood well in our Bible-class. His troubles with the boys found commiseration from our tender-hearted ladies, so that while in disfavor in the dormitories he was in high favor with the court.

On a quiet Sunday afternoon, when the children were scattered in their various clubs in distant parts of the grounds, excepting that to which G. belonged, our carpenter-shop was discovered in flames. The locked door had been opened by prying, a window was noticed to be partially elevated, and marks of violence upon a tool-chest in which matches were usually kept by the carpenter. Immediately after the fire an attempt was made to sift the testimony of eight or ten feeble-minded boys, the substance of which pointed to one of two or three boys as possibly involved in the incendiarism.

This preliminary examination resulted in placing G. in confinement, with the hope of eliciting from him such confession as might corroborate the circumstantial evidence that pointed to him.

Through three long weeks this sweet-faced, praying, pleading boy held out against all kindness, all persuasion, and we were well-nigh giving up the task, when finally the following letter addressed to his mother passed through our office:

"DEAR MOTHER,—I cannot be satisfied until I tell you what I have done. I am very sorry to tell you of it, but it is better for me to tell it myself. On last Sunday I thought I would like to see how the fire-machines were used, and I got into the carpenter-shop, took a match out of the cupboard, and set the shavings on fire. When the blaze got about a foot high, I hallooed 'fire' before it got too big. I cannot rest until I tell you. Every one treats me too kind to do anything like that in spite to any one. I cannot tell you

how I feel. My heart is like a lump of lead. I am so afraid that you will think I am never going to become a good man. I have asked the Lord to forgive me, and I know he will if I obey him. I have learned the fifth chapter of Romans, and I am going to be a good boy after this," etc.

I found by interrogating the police authorities of his town that he had, prior to his admission to our institution, been shut up for petty larceny, and a late admission came from his mother that he had fired her own house. With these facts before me, I placed him in the House of Refuge, where, two weeks afterwards, it was sincerely believed that the boy had been wrongfully committed, so well had he played his *rôle* of sweetness, and that the confession had been a forced one under the distress of confinement.

The etiological history of Guy is somewhat interesting. The paternal grandmother is described as a fanatic on the subject of religion; the eldest son of this grandmother thinks that he lives without sin, and his brother (this boy's father) is of the same belief, and has been at all times deranged on the subject of religion. The mother's testimony is as follows: "Practically my son might as well have no father, whose only faculties are building engines and studying the Bible. He passes through the world neither seeing, hearing, nor feeling anything that is not directly connected with either of these his two hobbies. Notwithstanding his devotion to Scripture, he is subject to attacks of brutal anger."

Frank L. is thus described on his admission to our school, March 24, 1880, by the teacher in charge: "He is 12 years old, has attended school in winter for the last two or three years, and in summer worked on a farm. Notwithstanding his limited advantages, he can read in the American Third Reader and write an intelligible letter; adds eights, sixes, and fives; can write short sentences; knows the primary and secondary colors; can tell time; draws a little. In form, knows the square, oblong, and circle. Smiles a great deal; is a little deaf. In April he is described as showing much interest in a few simple lessons in botany. Writes short letters, very well expressed. He is a good boy in school."

Scarcely a symptom of intellectual or moral infirmity had been discerned in this interesting boy, when, without known reason, he eloped, which threw our family into great distress, relieved only when writing the father upon the subject, who replied, "I can take no steps towards his recovery: I have already spent hundreds of dollars in bringing him back from just such escapades."

The boy had been committed to us by Judge Ross, of an adjoining county, who found this blue-eyed, sweet-faced lad in the cell of their county prison, beating his head violently against the wall and asserting that he "meant to make himself like his mother, who was already crazy." The sympathetic judge recognized the imbecility of the boy, and refused to pass judgment upon the trivial offence for which he had been arrested.

A few months after his elopement, a newspaper sent to us from Escanaba, Michigan, related the story of a boy who had appeared in that town and who had excited a very great interest.

The boy had been found standing on the shore of the lake, weeping bitterly and explaining to citizens that his father had just thrown himself overboard and drowned. Boat-hooks and fishing-nets were brought into requisition, and for many hours there was an earnest endeavor to recover the missing father, when a more reflecting citizen, upon close interrogation of the boy, discovered that the story was a hoax. The editor of the morning paper took a friendly interest in the boy, and carried him to his office, and explained the case the next morning at great length in a sensational column to be one of insanity from exposure and hardship. The evening paper of a political rival came out with a column protesting that the little fellow was an incorrigible waif from one of the Eastern refuges, and had hoaxed its half-witted contemporary by playing off the insanity dodge.

It proved to be our Frank, for among conflicting statements he had said that he had an uncle near Media, Pennsylvania, which resulted in the return of the boy to our institution, but for a brief season only, for, after six or eight months of diligent attention in school and workshops, and seemingly contented and happy, he suddenly, without known cause, left for parts unknown. After many months he was reported by the police authorities of Chicago, and through the courtesy of these public-spirited gentlemen and of our own police force in Philadelphia, Frank was returned, to come into the office with the same blue-eyed confidence, to settle again at the harness, and with the keenest adaptation to resume his alto horn in the band. Again, without any reason for it that could be ascertained, suddenly and as certainly as before he again eloped, and is at present somewhere within fifty miles of the institution, occasionally appearing to acquaintances quite near us, but mysteriously fading away.

(To be continued.)

NEW YORK PATHOLOGICAL SOCIETY.

STATED meeting, March 9, 1887, the President, T. MITCHELL PRUDDEN, M.D., in the chair.

NUMEROUS SMALL CALCULI IN THE SPLEEN.

Dr. W. H. PORTER presented a number of small calculi, varying in size from that of a

filbert down, which had been removed from the spleen of a man at autopsy. He had counted about one hundred. There were no infarctions and no cardiac lesions. The calculi were scattered throughout the substance of the spleen.

GALLSTONES.

Dr. PORTER also presented some gallstones in a case which suggested the propriety of removal of the gall-bladder, an operation which had been performed nine times, with a bad result in only one.

EFFECT OF ANTIPYRETIC DRUGS ON THE LIVER AND KIDNEYS.

Dr. PORTER also presented the liver and kidneys of a patient who had had a moderate attack of rheumatism. Later, antipyrine was given at rather short intervals for the purpose of reducing the temperature, but it seemed to have had little influence. When the patient entered the hospital the temperature was 105° F., and after antipyrine was given it rose to 107°. Antipyrine was omitted and salicylic acid was given, when the temperature fell to 103°. Antipyrine again being given, the temperature again rose. Antifebrine was also given, but the temperature rose higher and higher, and the patient died with a temperature of 109° or 110° F. In looking over the literature he had found that some men who had experimented with such antipyretic drugs as antipyrine, antifebrine, thalline, etc., had observed the appearance of casts and albumen in the urine, and at the autopsy extensive metamorphosis of the liver and kidneys; but they claimed that this was of no practical importance. Some had also observed that in patients treated with antipyretic drugs, especially typhoid-fever patients, the duration of the disease was longer,—forty-two days instead of about thirty-two days, as was observed when baths and antipyretic measures other than these drugs were resorted to. One writer had said that by the use of antipyrine he had succeeded in getting the highest death-rate, but he was inclined to think that the patients were more comfortable while they lived. In studying the condition of the kidneys and liver in cases in which these antipyretic drugs had been employed, Dr. Porter had noticed in the history that the temperature had been higher than in cases in which such drugs were not employed, and he found a much greater degree of granular and fatty metamorphosis in the liver and kidneys. He had therefore come to believe that antifebrine, antipyrine, and thalline were not as safe drugs as we had been taught. The effect of the increased temperature occurring at some period of the disease after their use was to cause this marked metamorphosis of the liver and kidneys,—primarily of the liver, secondarily of the kidneys.

SYPHILITIC SALPINGITIS.

Dr. H. J. BOLDT presented the tubes and ovaries of a woman illustrating what he believed to be syphilitic salpingitis, as there was no history of gonorrhœa or other cause of the trouble. She had a chancre, and at the time of the operation had well-marked general secondary lesions of syphilis. The intense pelvic pain disappeared after the operation.

PROLAPSED CYSTIC OVARY.

Dr. BOLDT also presented the tubes and ovaries removed in another case for cystic degeneration of the ovaries in a patient who suffered severely from a number of symptoms,—headache, dyspepsia, pain in the back, hypogastric and inguinal pains, dysmenorrhœa, and troublesome cardiac palpitation. It was nearly three months since the operation, and all the symptoms had disappeared except the palpitation, which was somewhat ameliorated. Other treatment had been resorted to before the operation, but without avail.

CARCINOMA OF THE BLADDER.

Dr. FRANK FERGUSON presented the bladder of a man, 61 years of age, who had never had gonorrhœa nor stone in the bladder. He had lost flesh. Micturition was painful and frequent. The steel sound was grasped in the prostatic portion of the urethra. The prostate gland was enlarged. The urine was alkaline, 1014; contained a trace of albumen, and mucus and pus.

The autopsy revealed a tumor at the base of the bladder, involving the entrance of both ureters. The tumor appeared slightly raised above the mucous membrane; was circular in outline, one and one-quarter inches in diameter. The ureters were greatly dilated, and their entrance into the bladder could scarcely be traced through the tumor. The pelvis of the kidneys was dilated. There was chronic diffuse nephritis. The rectum and seminal vesicles were invaded by the carcinomatous growth.

INJURY OF THE BRAIN—RECOVERY.

Dr. JOHN A. WYETH presented the drawing of a piece of fence-rail, measuring in its different diameters two and three-fourths inches, three-fourths of an inch, and one-half an inch, which about four years ago was removed by Dr. Cross, of Alabama, from the brain of a negro, having penetrated the supraorbital plate. The injury occurred from a fall from a moving train. The patient was unconscious after the accident. The eyeball was thrust out upon the cheek. About one teaspoonful of brain-substance was lost. The eye was removed, the patient recovered, and showed no mental symptoms.

Dr. W. M. CARPENTER referred to two similar cases seen by him in the country in boys, both of whom recovered without mental

symptoms remaining, in one the eye being entirely lost, in the other the ball being saved, but sight lost. In both cases the injury was from the kick of a horse.

RECURRING GROWTH BELOW THE EAR.

Dr. DUDLEY presented a small specimen removed from a woman, 28 years of age, who gave the history that about three years ago a physician removed a small growth from below the ear, which was said to be a simple encapsulated fibroid. A year later another physician removed a growth from the same region, consisting of the old cicatricial tissue and some fatty tissue. About one year later Dr. Dudley was called upon to remove the present growth, which seemed to be a simple cyst with its capsule spread throughout the surrounding tissue, closely adherent to the large vessels. It was referred for examination.

LARGE FIBROID OF THE UTERUS—HYSTERECTOMY.

Dr. DUDLEY also presented a solid fibroid tumor of the uterus weighing nine pounds, to which were attached the uterus and its appendages. The patient had complained only of a dragging weight in the back and swelling of the right leg, but an abdominal tumor was not suspected until ten days before its removal, when Dr. Dudley first examined the patient. The operation was performed yesterday. The temperature was below 100° F.

MISPLACED KIDNEY.

Dr. I. VAN GIESON presented the right kidney removed at autopsy from the body of a man, aged 30. It lay in the hollow of the sacrum, its superior apex being on the level of the pelvic brim. Its internal border followed the median line of the body.

GREATLY-ATROPHIED KIDNEY.

Dr. VAN GIESON also presented a greatly-atrophied kidney, the capsule and cortex measuring from two to three millimetres, the cortex consisting largely of glomeruli.

GENERAL TUBERCULOSIS IN AN INFANT.

Dr. W. P. NORTHRUP presented specimens from the body of a mulatto child, aged 2 years, which had been returned to the asylum by the nurse two days before death. It had suffered from repeated convulsions. No diarrhœa; no vomiting. The autopsy showed tuberculosis of the brain, lungs, mesenteric glands, etc., but the spleen escaped. In the cerebellar structure was a large tubercular tumor. The mesenteric glands were very much enlarged, as were also the bronchial. Peyer's patches were considerably ulcerated.

A NEW STAIN FOR MICRO-PHOTOGRAPH SPECIMENS.

Dr. ROOSEVELT presented microscopic specimens illustrating the value of a new stain for micro-photograph work. It was, as far as he was informed, new. It could be made of about one ounce of water to which were added thirty-five drops of a saturated solution of ferrous sulphate. To this add about fifteen or twenty drops of a saturated solution in alcohol of pyrogallic acid. After a while the color becomes a peculiar brownish gray.

NEW YORK ACADEMY OF MEDICINE.

A STATED meeting was held March 17, 1887, the President, A. JACOBI, M.D., in the chair.

BACTERIA IN ICE, AND THEIR RELATIONS TO DISEASE, WITH SPECIAL REFERENCE TO THE ICE-SUPPLY OF NEW YORK CITY: AN EXPERIMENTAL STUDY.

Dr. T. MITCHELL PRUDDEN read the paper, which was based on experimental study by the new method of water-analysis which had to do with its living contaminations: the so-called biological analysis. It was not to be inferred that this method was intended to supersede the chemical. They were in most cases mutually supplementary; but so far as a certain class of diseases which might be transmitted by water, such as typhoid fever and cholera, was concerned, it was safe to say that the biological method was by far the more important. The method was very simple, but it required for its execution considerable patience, care, and experience. The method was briefly described. The following was a summary of his investigations:

If he had accomplished the primary purpose of the paper, he had shown that by the biological analysis of water and of ice we could detect with great certainty the presence of bacteria some species of which could give rise to serious disease, but that, when we had determined the number of bacteria present in water or ice, a careful consideration of other conditions was still imperative in order to determine whether the water or ice was fit for use.

He had shown that the popular impression that water purified itself in freezing was only partly true so far as the bacteria were concerned. The partial purification from bacteria was accomplished not by their expulsion from the water, but by the death of a certain proportion of them; so that, if the bacterial contamination of the water was extreme, or was largely made up of the more hardy species, the ice formed from it, even though quite transparent, might still contain a large number of the living germs.

He had shown that different species of bacteria possessed different degrees of vulnera-

bility to the action of low temperatures. Certain species which were capable of causing serious and even fatal diseases in man—the bacillus of typhoid fever and the common bacteria of suppuration, for example—were capable of resisting a prolonged low temperature with the destruction of a part only of the individuals thus exposed. In the case of the typhoid-fever germs the exposure had lasted seventy-seven days.

He had shown that the resisting capacity of the different species varied with the vitality of the individuals, the degree of temperature, and the time of exposure, and that alternate freezings and thawings sufficed to exterminate completely in a short time all species experimented on, even those which could endure for a long period a sustained low temperature. Data had been gathered which seemed to justify the conclusion that in the freezing of natural waters there might be a purification from bacteria amounting to as much as ninety per cent. We had learned that the effect of freezing on water containing bacteria was comparable to that of filtration, but with this vital difference: that whereas by filtration all forms of bacteria were removed in approximately equal ratio, by freezing, which acted as a sort of selective infiltration, some of the most dangerous forms might be retained while others were destroyed.

He had shown that New York City ice came from a series of naturally excellent lakes and ponds, and from a great tidal river rich in sewage-pollution. He had shown that while the conditions in the upper Hudson did not seem during the ice-forming season to be such as would favor purification from organic matter by oxidation, they did seem to be theoretically—and were shown to be practically—favorable to a considerable degree of spontaneous purification from bacteria by sedimentation; but the limits and extent of this purification were yet to be made out.

Coming to the actual analysis of the ice from both the river and the lakes and ponds, he found a much greater number of bacteria in the snow-ice than in that which was clear or moderately bubbly. He found that the species of bacteria were much more varied and abundant in the river-ice than in that from other sources, while in both there was a considerable proportion of the relatively harmless water-bacteria. He found that while the number of living bacteria varied greatly, not only in different parts of the same block of ice, but also in ice in different parts of the river and from different lakes and ponds, the average number was considerably greater in ice from the river than from lakes and ponds, even when Albany ice, which was worst of all, was excluded from the estimate. He had shown also that the average number of bacteria in ice from all sources taken together was far beyond the general standard which even a moderate degree of purity would allow.

The measures which might be adopted in view of the present condition of affairs were of two kinds: first, such as would come under the supervision of health officers; second, those which belonged in the province of individual consumers.

In the first place, it would seem necessary that the State Board of Health or some other authorized body should be placed in charge of the ice-harvesting fields, and, by a system of inspection not less strict than that which should exist in the case of the ordinary water-supply, determine which, if any, of the sources of ice-supply were so situated as to imperil the health of consumers of ice. In view of what had been seen, this would appear to be comparatively simple in all cases except that of the Hudson River. Here it would be necessary to establish by a most thorough scientific examination the distances from all sources of sewage-pollution at which it might be safely assumed that the water had freed itself from bacterial and other impurities sufficiently to form safe ice. It might in this way be possible to remove any chance of danger by permitting the questionable or bad ice to be sold only for cooling purposes, if such a classification were practicable, and thus not materially interfere with the interests of the ice-companies. A compulsory system of disinfection of excreta in infectious diseases might be instituted.

When we consider the precautions which the individual consumer might adopt, it is evident, from what has been seen, that if he could be certain that his supply came only from the lakes and ponds he would secure for himself a fair degree of immunity from danger. He might avoid ice cut in the vicinity of Albany. Snow-ice should be used only for cooling purposes. A variety of devices might be adopted in the use of ice for the cooling of drinking-water, such as pitchers containing receptacles for the ice, in the cooling of the water in refrigerators, also by making ice artificially from pure water.

REVIEWS AND BOOK NOTICES.

A TEXT-BOOK ON SURGERY, GENERAL, OPERATIVE, AND MECHANICAL. By JOHN A. WYETH, M.D., etc. New York, D. Appleton & Co., 1887. 8vo, leather. Pp. 777.

This handsome volume, clearly printed and freely illustrated, is a valuable contribution to the literature of operative surgery. The sections on Amputations, on Ligations of Arteries, and on Hernia have unusually large diagrams of dissections, in which the vessels are colored red and blue to distinguish them more readily. In the chapter on Anæsthesia the preference is given to ether over chlo-

roform, and etherization by the rectum is condemned. Nothing is said about other agents in use for general anæsthesia, such as ethyl bromide, chloral hydrate, or even alcohol. The method of Bonwill by rapid inhalation, and hypnotism for surgical purposes, also deserve consideration. In naming the remedies to be used to resuscitate patients apparently dangerously affected by the anæsthetic, the author omits the use of faradism, nitrite of amyl by inhalation or injection, and ammonia. The contraindications to the use of these anæsthetics, to which Paget and others have directed attention, should also have received consideration, and the preliminary use of atropine to sustain the respiratory function during prolonged operations should be mentioned. The sections upon Regional Surgery are most satisfactory. The last section is devoted to a brief exposition of the clinical and microscopical character of tumors.

A CENTURY OF ELECTRICITY. By T. C. MENDENHALL. Boston and New York, Houghton, Mifflin & Co.; Philadelphia, Porter & Coates. 12mo. Pp. 229.

This book gives a concise history of the development of the galvanic battery, the induction coil, and the main results of the discovery by Oerster of the relationship between electricity and magnetism. One of the best chapters in it is that on "Who Discovered the Electric Telegraph?" and due credit is given to *all* who contributed to the evolution of the instrument, instead of assigning the glory to Morse, as is too often done,—to the detriment of Henry, in particular.

A singular fault in the description of the phonic apparatus is the omission of any reference to Blake, whose transmitter is in general use on all systems.

A condensed description of the development of arc and incandescent lighting and the transmission of energy by electric motors closes the volume. The work is a good one for general readers.

NERVOUS DISEASES AND THEIR DIAGNOSIS. A Treatise upon the Phenomena produced by Diseases of the Nervous System, with Especial Reference to the Recognition of their Causes. By H. C. WOOD, M.D., LL.D., Member of the Academy of Science. Philadelphia, J. B. Lippincott Company, 1887. Pp. 501. 8vo, cloth. $4.

This timely work upon the semeiology and diagnosis of diseases of the nervous system has its proper field indicated and prepared in the minds of its readers by an introductory section, in which the relation of over-exertion or exhaustion of nerve-cells to organic disorder and physical bankruptcy is insisted upon. Neurasthenia is not, therefore, to be looked upon as a separate disease, but as the result of a strain which is excessive in its relations to the organism which has to bear it. In some it is the expression of premature old age, in the opinion of the author. The various functional and organic Paralyses are discussed in the first section, followed by Motor Excitements in the second. The third chapter is devoted to a consideration of the Reflexes, and the fourth to Disturbances of Equilibration. Trophic Lesions, Sensory Disturbances, Disorders of Memory, of Consciousness, and of Intellection, complete the eleven chapters composing the book, which is replete with information gained from a peculiarly favorable clinical experience and a wide range of reading. The work, however, is not a mere labored compilation, but shows the hand of the skilled diagnostician and experienced physician. It is a compend which should be in the library of every physician.

MISCELLANY.

JEFFERSON MEDICAL COLLEGE. — The Sixty-Second Annual Commencement was held April 5, 1887, at noon. Professor J. W. Holland, M.D., delivered the valedictory. There were one hundred and eighty-seven graduates in medicine who had the degree conferred upon them. At the Alumni meeting, on the evening preceding the Commencement-day, Professor Hunter McGuire, M.D., of Richmond, Virginia, delivered the annual oration, and was honored by a reception at the Hotel Bellevue.

THE MEDICO-CHIRURGICAL COLLEGE held its Sixth Annual Commencement exercises on the 7th instant, Professor P. D. Keyser, M.D., delivering the Valedictory Address to the graduates, who numbered fifteen. The Alumni Oration was delivered by Professor Dudley S. Reynolds, M.D., of Louisville, Kentucky, who was the guest of the Association at a banquet of two hundred covers at the Colonnade Hotel.

STATE MEDICAL SOCIETY OF PENNSYLVANIA.—The attention of those members who intend reading papers at the Thirty-Eighth Annual Meeting, to be held at Bedford Springs in June, is directed to the fact that in order to secure a place on the programme it will be necessary to send the titles of their communications as early as possible to the Secretary. Railroad facilities will also be furnished upon application.

"THE AMERICAN SYSTEM OF GYNÆCOLOGY AND OBSTETRICS," edited by Drs. M. D. Mann, of Buffalo, and B. C. Hirst, of Philadelphia, in four very handsome octavo volumes, will appear shortly, according to the announcement made by the publishers, Lea Brothers & Co., Philadelphia.

JOUSSET, a leader among European homœopaths, gives the following expression to a belief that is in him: "Homœopathy cannot take the place of palliative medication; nor of surgical medication; nor of antidotal medication in cases of poisoning; nor of parasiticide medication whenever clearly demanded; nor of medication by mineral waters; nor of hydrotherapeutic medication; nor of medication by electricity; nor even of empirical medication. Homœopathy is not everything, and liberal medication must include all collateral modes of treatment."—*Medical Age.*

THE GUILD OF ST. LUKE, Evangelist and Physician, has been organized in this country among physicians and medical students who are communicants of the Protestant Episcopal Church. Its chief objects are declared to be to encourage a higher Christian life, to discourage wickedness and vice in the profession, and by avoiding profanity and unclean conversation to encourage reverence for sacred things; also to promote and defend the faith, and to aid in the support of medical missionaries. The entrance-fee is one dollar; annual dues, fifty cents. W. Thornton Parker, M.D., of Newport, Rhode Island, is Provost; Rev. W. F. Morrison, Chaplain U.S.N., is the Secretary.

MEDICAL DEGREES FOR LONDON STUDENTS.—A large meeting of the students of the London Hospital was recently held to discuss the scheme for providing medical degrees for London students. Dr. Langdon Down, in the chair, was supported by Mr. Treves, Dr. Francis Warner, and Mr. Munro Scott (Warden). Mr. F. Treves proposed, and Mr. J. Moore seconded, "That a committee be formed to draw up a petition to the Royal Colleges, praying that they use their best endeavors to obtain the power of granting a degree in medicine, and that this committee take such steps as they may think fit to support this petition." Dr. Warner spoke in support of the proposition, which was carried unanimously. Messrs. H. Smith, Watts, Moore, Taylor, and Rayner were elected on the committee, the latter to act as secretary. The meeting was enthusiastic throughout.

ANTISEPTIC COLLODION.—The *Journal de Médecine* of December 26 contains an account of a new kind of "collodion" which is antiseptic and promotes cicatrization. It does not cause inflammation, and may be substituted for collodion made from gun-cotton in the treatment of wounds and bruises. Like traumaticine, it is efficacious in relieving neuralgic pains and acute or chronic rheumatism. The affected parts should be sponged with it every twenty-four hours, and in serious cases every six hours. If strips of linen or silk be soaked in this collodion, an excellent sticking-plaster is obtained, which quite equals English court-plaster. The following is the formula: Mastic in globules, three grammes; balsam of Peru, one gramme; narcotine, one gramme. Each ingredient should be ground separately, and five grammes of chloroform added thereto.

ADOPTION OF NON-RESTRAINT IN THE STATE LUNATIC ASYLUM AT UTICA.—Dr. G. A. Blumer, the new superintendent at Utica, has inaugurated his official course by abolishing mechanical restraint, resort to which had been steadily decreasing in frequency for some years, under the late Dr. John Gray.

OFFICIAL LIST

OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U.S. ARMY FROM MARCH 27, 1887, TO APRIL 9, 1887.

CAPTAIN JOHN VAN R. HOFF, ASSISTANT-SURGEON.—Ordered for duty at Fort Reno, Indian Territory. S. O. 43, Department of the Missouri, April 4, 1887.

CAPTAIN W. H. CORBUSIER, ASSISTANT-SURGEON.—Granted leave of absence for one month. S. O. 35, Department of Arizona, March 29, 1887.

CAPTAIN HARRY O. PERLEY, ASSISTANT-SURGEON.—Ordered for temporary duty at Fort Maginnis, Montana Territory. S. O. 23, Department of Dakota, March 18, 1887.

CAPTAIN H. G. BURTON, ASSISTANT-SURGEON.—Ordered to Plattsburg Barracks, New York, for temporary duty. S. O. 78, A. G. O., April 5, 1887.

CAPTAIN L. A. LA GARDE, ASSISTANT-SURGEON.—Ordered for duty at Fort Assiniboine, Montana Territory. S. O. 78, A. G. O., April 5, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U.S. NAVY FOR THE WEEK ENDING APRIL 2, 1887.

PASSED ASSISTANT-SURGEON J. R. WAGGENER.—Commissioned a Surgeon on the 18th of March, 1887.

PASSED ASSISTANT-SURGEON H. B. FITTS.—Ordered to the Receiving Ship "Vermont."

ASSISTANT-SURGEON E. C. TRACY.—Detached from the "Vermont" and ordered to the "Atlanta."

PASSED ASSISTANT-SURGEON A. C. HEFFINGER.—Detached from the "Atlanta" and ordered on special duty in connection with construction of hospital at Widow's Island, Maine.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U.S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDING APRIL 9, 1887.

URQUHART, F. M., PASSED ASSISTANT-SURGEON.—To assume charge of Cape Charles Quarantine, March 29, 1887.

NORMAN, SEATON, ASSISTANT-SURGEON.—To report for duty at Cape Charles Quarantine, April 2, 1887.

BAILHACHE, P. H., SURGEON.—Detailed as chairman Board of Examiners, to meet in Washington, April 25, 1887. April 4, 1887.

PURVIANCE, GEORGE, SURGEON.—Detailed as member Board of Examiners, to meet in Washington, April 25, 1887. April 4, 1887.

GODFREY, JOHN, SURGEON.—Detailed as recorder Board of Examiners, to meet in Washington, April 25, 1887. April 4, 1887.

IRWIN, FAIRFAX, PASSED ASSISTANT-SURGEON.—To proceed to Baltimore, Maryland, on special duty, April 8, 1887.

PETTUS, W. J., ASSISTANT-SURGEON.—To proceed to Norfolk, Virginia, for temporary duty, April 4, 1887.